Volume Contents 1986

NUMBER 1

	i	Contributors to this issue
	iii	Editorial Announcement
	1	Erratum
		TETRAHEDRON REPORT NUMBER 194
Eliahu Caspi	3	The mode of incorporation of C-2 hydrogen atoms of mevalonic acid into protosterols and sterols
Nicoletta Almirante, Maria Luisa Gelmi, Donato Pocar, Mariella Valsecchi, Marzia Ballabio and **Bruno Gioia**	51	v-Triazolines—XXII. Cycloaddition reactions of cyclopentadienones to 5-amino-4-methylene-v-triazolines
Nicoletta Almirante, Maria Luisa Gelmi, Paola Marelli, Donato Pocar, Emanuele Arlandini and **Marzia Ballabio**	57	v-Triazolines—XXIII. Cycloaddition reactions of 4-nitrophenylazide to enamines of 1,4,5,6-tetraphenyl-7-oxo-bicyclo[2.2.1]hept-5-en-2-carboxaldehyde
Lorenzo Testaferri, Marcello Tiecco, Marco Tingoli and **Donatella Chianelli**	63	Stereospecific synthesis of divinyl selenides. Nucleophilic substitutions of unactivated vinyl halides by vinyl selenide anions
Norbert De Kimpe, Mariana Palamareva, Paul Sulmon, Roland Verhe, Laurent De Buyck, Niceas Schamp, Jean-Paul Declercq, Bernard Tinant and **Maurice Van Meerssche**	71	Unusual ring opening of a cyclopropylideneamine derivative during a Favorskii-type rearrangement of α-chloroketimines
A. Garcia-Granados, A. Molina and **E. Cabrera**	81	Biomimetic cyclization of 4β,5α-epoxy-6β-acetoxy-*trans*-germacr-1(10)-ene to form *cis*-(1β-H;5β-H)-guaianes
C. W. Bird	89	The application of a new aromaticity index to six-membered ring heterocycles
Elizabeth A. Jordan and **Melanie P. Thorne**	93	^{13}C NMR determination of the conformational equilibria in the acetates, benzoates and N-phenylcarbamates of 1-methylcyclohexanol and cyclohexanol
Alan R. Katritzky, Jen-Luan Chen, Charles M. Marson, Angelamaria Maia and **M. Akram Kashmiri**	101	The non-chain radicaloid C-alkylation of nitronate anions: further evidence for the mechanism
J. O. Dzięgielewski	109	Gamma radiolysis of 1,2-bis(diphenylphosphine)ethane in methanol and cyclohexane solutions and in the solid state
Lilias Rees, Edward Valente, Colin J. Suckling and **Hamish C. S. Wood**	117	Asymmetric reduction of dihydrofolate using dihydrofolate reductase and chiral boron-containing compounds
Zeynel Kiliç and **Necla Gündüz**	137	The synthesis of asymmetric macrocyclic polyethers containing nitro group on aromatic ring

S. Vera and **E. Rodenas**	143	Inhibition effect of cationic micelles on the basic hydrolysis of aromatic esters
Marino Petrini, Roberto Ballini, Goffredo Rosini and **Emanuela Marotta**	151	Furan ring as masked 3-acylacrylate moiety. Practical synthesis of racemic (*E*)4,4(ethylenedioxy)-7-hydroxy-2-octenoic acid, the C-8 subunit of pyrenophorin
F. Gaviña, S. V. Luis, A. M. Costero and **P. Gil**	155	Arynic species; effect of substituents on the reactivity of mono-substituted dehydrobenzenes
C. A. M. Vijverberg, J. A. Peters, A. P. G. Kieboom and **H. van Bekkum**	167	An NMR study of gadolinium(III) hydroxycarboxylate complexes in aqueous medium using Gd(III) induced ^{13}C relaxation rate enhancements
Stephen G. Davies, Robert J. C. Easton, Jonathan C. Walker and **Peter Warner**	175	Synthesis and characterisation of *E* and *Z* α,β-unsaturated acyl complexes $[(\eta^5\text{-}C_5H_5)Fe(CO)(PPh_3)(COCH{=}CHR)]$ (R = H, Me, Et, *n*-Bu, *t*-Bu, Ph, vinyl, 2-furyl)
Mihailo Lj. Mihailović, Ljubinka Lorenc, Lidija Bondarenko, Bernard Tinant, Jean-Paul Declercq and **Maurice Van Meerssche**	189	The formation of 8,14-seco-steroid systems: 3β,5,17β-trihydroxy-8,14-seco-5α-androstan-8-one and its 3,17-diacetate ester
N. Sole, J. L. Torres, J. M. Garcia Anton, G. Valencia and **F. Reig**	193	Mixed anhydrides in peptide synthesis. Factors affecting urethane formation and racemization
Tadao Kondo, Kaoru Okamoto, Manabu Yamamoto, Toshio Goto and **Nobuo Tanaka**	199	A total synthesis of cadeguomycin, a nucleoside antibiotic produced by *Streptomyces hygroscopicus*
Tadao Kondo, Kaoru Okamoto, Tadaaki Ohgi and **Toshio Goto**	207	Syntheses of hypermodified nucleoside Q, and its biosynthetic precursors $preQ_0$ and $preQ_1$
P. G. Forster, E. L. Ghisalberti, P. R. Jefferies, B. W. Skelton and **A. H. White**	215	A new class of tricyclic diterpenes from *Eremophila georgii* Diels (Myoporaceae)
Björn Elman and **Christina Moberg**	223	The synthesis of (+)- and (−)-1-(1-isoquinolinyl)-1-(2-pyridyl)-ethanol. A chiral ligand with useful chelating properties
Kazunari Taira, Kofen Lai and **David G. Gorenstein**	229	Stereoelectronic effects in the conformation and hydrolysis of epimeric (4aα,8aβ)-hexahydrobenzo-2-(*p*-nitrophenoxy)-2-oxo-1,3,2λ^5-dioxaphosphorinanes and 4aα-methyl-8aβ-pentahydrobenzo-2-(*p*-nitrophenoxy)-2-oxo-1,3,2λ^5-dioxaphosphorinanes
F. Thane DeWeese, David E. Minter, John T. Nosovitch, Jr. and **Michael G. Rudel**	239	Regiospecificity in the nucleophilic ring opening reactions of *gem*-dichlorocyclopropylcarbinyl cations
Frank S. Abbott, J. Gregory Slatter and **Gun Il Kang**	245	Characterization of new oxidation products of the perchlorate salt of the methadone metabolite, (±)-2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP)
Michael J. Cook, Tauqeer A. Khan and **Khalida Nasri**	249	The effect of *para*-substituents on the conformational behaviour of aromatic sidechains
Sang Chul Shim, Keun Tai Huh and **Woo Hyun Park**	259	A new and facile synthesis of N-substituted pyrrolidine of amines with aqueous succinaldehyde using tetracarbonylhydridoferrate, $HFe(CO)_4^-$, as a highly selective reducing agent
Feng-Peng Wang and **Xiao-Tian Liang**	265	Interconversion of hetidine- and atisine-type diterpenoid alkaloids: facile cleavage and regeneration of the C(14)—C(20) bond
Kenji Mori and **Hidenori Watanabe**	273	Synthesis of both the enantiomers of polygodial, an insect antifeedant sesquiterpene
Kenji Mori and **Yutaka Nakazono**	283	Synthesis of both the enantiomers of dihydroactinidiolide, a pheromone component of the red imported fire ant
Kenji Mori, Hideto Mori and **Makoto Yanai**	291	Synthesis of (2*S*,4a*S*,8a*R*)-(−)-1,1,4a-trimethyl-2-decalol, an inhibitor of steroid biosynthesis
Kenji Mori and **Hidenori Watanabe**	295	Enhancement of optical purity of a product by removing unwanted diastereomers in the course of a chiral synthesis: new synthesis of the stereoisomers of 2,8-dimethyl-1,7-dioxaspiro[5.5]undecane, the pheromone of *Andrena wilkella*
Masato Mizutani, Yuzuru Sanemitsu, Yoshinao Tamaru and **Zen-ichi Yoshida**	305	Palladium-catalyzed cyclization reactions. Unique synthesis of condensed thiazoles
R. Flammang, S. Lacombe, A. Laurent, A. Maquestiau, B. Marquet et **S. Novkova**	315	2H-Azirines en milieu acide. Formation et réactivité d'α-iminocarbéniums

G. Aranda, M. Fetizon, N. Tayeb, J. Guilhem et **C. Pascard**	329	Synthèse d'antibiotiques triterpéniques à partir d'acides biliaires—III. Synthèses par époxydation et cyclopropanation d'intermédiaires susceptibles de conduire aux dérivés méthylés $14\alpha\Delta^{(8,9)}$
Yves Le Bigot, Michel Delmas et **Antoine Gaset**	339	Réactions en milieu hétérogène solide–liquide faiblement hydraté—II. La réaction de Wittig dans les systèmes carbonates alcalins/solvant organique aprotique
A. Gorgues, A. Simon, A. Le Coq, A. Hercouet et **F. Corre**	351	Versatilité de réactivité de l'acétylène dicarbaldéhyde et des aldéhydes α-acétyléniques à l'égard des diènes conjugués cycliques et hétérocycliques en milieu acide
G. Doucet Ladeveze, Y. Jabbari Azad, L. Rodehüser, P. Rubini, C. Selve et **J. J. Delpuech**	371	Synthèse, propriétés complexantes et pouvoir extractant de β-diphosphoramides hydrophobes
J. Chojnowski, M. Cypryk, J. Michalski, L. Wozniak, R. Corriu and **G. Lanneau**	385	Optically active triorganosilyl esters of phosphorus. Synthesis and structure
A. Mannschreck, W. Munninger, T. Burgemeister, J. Gore and **B. Cazes**	399	Chiral recognition of allenic hydrocarbons by ^{1}H NMR
M. Largeron, D. Fleury and **M. B. Fleury**	409	Study of the reductive metabolism pathway of 4-methyl-5-(2-pyrazinyl)-1,2-dithiole-3-thione. An electrochemical approach
E. J. Padma Malar and **Karl Jug**	417	Excited states of antiaromatic systems
A. Gieren, C.-P. Kaerlein, T. Hübner, R. Herrmann, F. Siglmüller und **I. Ugi**	427	Stereoselektive Synthese und Struktur von 1-{Amino[(1*S*,2*S*,5*R*)-2-isopropyl-5-methylcyclohexyl]-(*S*)-methyl}ferrocen
Kenji Mori and **Masahiro Tsuji**	435	A new synthesis of (+)-6a-carbaprostaglandin I_2 employing yeast reduction of a β-keto ester derived from *cis*-bicyclo[3.3.0]octane-3,7-dione as the key-step

NUMBER 2

	i	Contributors to this issue
	445	Erratum
		TETRAHEDRON REPORT NUMBER 195
Janusz Jurczak, Stanisław Pikul and **Tomasz Bauer**	447	(*R*)- and (*S*)-2,3-O-isopropylideneglyceraldehyde in stereoselective organic synthesis
Isao Kubo, Akiko Matsumoto, Takeshi Matsumoto and **James A. Klocke**	489	New insect ecdysis inhibitory limonoid deacetylazadirachtinol isolated from *Azadirachta indica* (Meliaceae) oil
L. B. Ebert	497	The potassium metal reduction of perylene in tetrahydrofuran: evidence for the perylene dianion
Jun-ichi Matsuzaki, Hitoshi Hotoda, Mitsuo Sekine, Tsujiaki Hata, Shigesada Higuchi, Yoshifumi Nishimura and **Masamichi Tsuboi**	501	Self-complementary tetradeoxyribonucleoside triphosphates. Convenient chemical preparation and spectroscopic studies in solution
Zhao Hua-ming and **Wu De-xiang**	515	MO approach to the aromaticity of transition states of the generalized pericyclic reactions
Kenji Mori, Makoto Komatsu, Masaru Kido and **Kazuyuki Nakagawa**	523	A simple biogenetic-type synthesis of magnosalicin, a new neolignan with antiallergy activity isolated from *Magnolia salicifolia*
Jong Woong Ahn, Kojiro Wada and **Shingo Marumo**	529	Structure determination and absolute configuration of pisiferdiol, a new phenolic diterpenoid with a rearranged abietane skeleton from *Chamaecyparis pisifera* Endl
T. Terasawa and **T. Okada**	537	Convenient preparative routes to 19-hydroxy, 19-oxo-, 19-oic-, and 19-nor-deoxycorticosterone
William E. Hull, Klaus Seeholzer, Marlies Baumeister and **Ivar Ugi**	547	A modified synthesis of Mosher's acid and its use in a sensitive stereoisomer analysis of amino acid derivatives

Karl-Heinz Grosse Brinkhaus, Eberhard Steckhan and **Dieter Degner**	553	Indirect electrochemical side-chain oxidation of alkyl aromatic compounds—selective synthesis of methyl benzoates or ortho-benzoic acid trimethylesters
Angelo Clerici, Ombretta Porta and **Pasquale Zago**	561	Radical addition to the carbonyl carbon of ketones promoted by aqueous titanium trichloride in acidic medium. One step synthesis of pinacols and lactones
Serafin Valverde, Jose Cristobal Lopez, Rosa M. Rabanal and **Javier Escudero**	573	Reactions of abietic acid methyl ester with *m*-chloroperbenzoic acid
C. Cativiela, M. D. Diaz de Villegas and **E. Melendez**	583	On the synthesis of methyl (*Z*/*E*)-2-acetamido(or benzamido)-3-aryl-2-butenoates
Genrikh A. Tolstikov, Elvira E. Shultz and **Leonid V. Spirikhin**	591	Diene synthesis assisted by thebaine and 2-thiolen-4-on-1,1-dioxides as a route to sulphur containing alkaloids of the morphinane series
B. Almarzoqi, A. V. George and **N. S. Isaacs**	601	The quarternisation of tertiary amines with dihalomethane
Janusz Sepiot	609	Cyclization of ethyl ylidenecyanoacetates to carbocyclic *o*-amino-esters. An efficient synthesis of 1,2,3,6,7,8-hexahydro-as-indacene derivatives
D. Parker, R. J. Taylor, G. Ferguson and **A. Tonge**	617	Origins of the proton NMR chemical shift non-equivalence in the diastereotopic methylene protons of camphanamides
Alan R. Katritzky, Taher I. Yousaf, Ban Chi Chen and **Zeng Guang-Zhi**	623	A H-1, C-13 and N-15 NMR study of the Paal–Knorr condensation of acetonylacetone with primary amines
Wiesława Kudelska and **Maria Michalska**	629	Reaction of sugar epoxides with phosphorothioic acids, evidence of the pentacoordinate phosphorus intermediate in the reaction of 5,6-anhydro-1,2-O-isopropylidene-α-D-glucofuranose with phosphorothioic acids
M.-Lluisa Bennasar and **Joan Bosch**	637	Synthetic applications of 2-cyanopiperidines—II. Model studies in the synthesis of the indole alkaloid vinoxine
Manuel Marcos, Jose L. Castro, Luis Castedo and **Ricardo Riguera**	649	The reaction of dichlorocarbene with tertiary carboxamides. Preparation of α-chloromethylenelactams and (*E*)-chloroacrylamides
Tze-Lock Chan, Thomas C. W. Mak, Chi-Duen Poon, Henry N. C. Wong, Jian Hua Jia and **Li Li Wang**	655	A stable derivative of cyclooctatrienyne. Synthesis and crystal structures of 1,4,7,10-tetramethyl-5,6-didehydrodibenzo[*a,e*]cyclooctene and 1,4,7,10-tetramethyldibenzo[*a,e*]cyclooctene
A. Chauvin, J. Greiner, R. Pastor et **A. Cambon**	663	Synthèse et réactivité des perfluoroalkyl-3 alkylthio-3 propénoates d'éthyle: thiophènes et β-thioxoesters perfluoroalkylés
M. Laguerre, J. M. Léger, D. Youhouvoulou N'Gabé, C. Biran et **J. Dunoguès**	669	La polysilylation directe: une voie rapide d'accès à des modèles d'encombrement stérique très élevé
Dewan S. Bhakuni, Sudha Jain and **Sandeep Gupta**	675	The biosynthesis of the alkaloids of *Corydalis meifolia* Wall.
Kalyan Kali Sengupta, Tapashi Samanta and **Samarendra Nath Basu**	681	Kinetics and mechanism of oxidation of ethanol, isopropanol and benzyl alcohol by chromium(VI) in perchloric acid medium
S. M. Fahmy and **R. M. Mohareb**	687	Cyanothioacetamide in heterocyclic synthesis. A novel synthesis of 2-pyridothione derivatives
Ernest Giralt, Ramon Eritja, Enrique Pedroso, Claude Granier and **Jurphaas Van Rietschoten**	691	Convergent solid phase peptide synthesis—III. Synthesis of the 44–52 protected segment of the toxin II of *Androctonus australis Hector*
J. Alvarez-Builla, J. L. Novella, E. Gálvez, P. Smith, F. Florencio, S. García-Blanco, J. Bellanato and **M. Santos**	699	Synthesis and structural study on α-substituted-1-styrylpyridinium salts. Reinvestigation of Krohnke condensation
Nikolai S. Zefirov, Sergei I. Kozhushkov, Tamara S. Kuznetsova, Boris A. Ershov and **Stanislav I. Selivanov**	709	Rearrangements and cyclization—XVII. Mechanism of the formation of 1,2-azoles in reactions of 1,1-diacylopropanes with hydrazine and hydroxylamine derivatives
Bharat Singh, A. K. Singh, M. B. Singh and **A. P. Singh**	715	Kinetics and mechanism of oxidation of some alcohols by osmium tetroxide

H. Firouzabadi, N. Iranpoor, F. Kiaeezadeh and **J. Toofan**	719	Chromium(VI) based oxidants—1. Chromium peroxide complexes as versatile, mild, and efficient oxidants in organic synthesis
Marco Turconi, Adele Depaoli, Pietro Ferrari, Mauro Landi, Giangualberto Gallo and **Bruno Cavalleri**	727	Synthesis and structure determination of some derivatives of the antibiotic thermorubin
J. Ciosłowski	735	A CNDO/S study on the alkylbenzene–TCNE complexes
Alexander Senning, Holger C. Hansen, Mohamed F. Abdel-Megeed, Witold Mazurkiewicz and **Birgit Jensen**	739	Studies of dithiiranes and thiosulfines as reactive intermediates
M. Poje and **Lea Sokolić-Maravić**	747	The mechanism for the conversion of uric acid into allantoin and dehydro-allantoin. A new look at an old problem
Boris Šket, Nataša Zupančič and **Marko Zupan**	753	Evidence for intramolecular [2 + 2] cycloaddition process in the photo-Claisen rearrangement
Manuel González Sierra, Daniel A. Bustos, Marta E. Zudenigo and **Edmundo A. Rúveda**	755	Configurational assignment of epimeric 22,23-epoxides of steroids by carbon-13 NMR spectroscopy
L. I. Belen'kii and **A. P. Yakubov**	759	Stable heteroarenium ions—IX. Disproportionation of alkylthiophenium ions and its use for the synthesis of 2,4-dialkylthiophenes
Jan Bergman and **Börje Egestad**	763	Cyclocondensation of 3(2H)-benzo[*b*]thiophenone and oxidation products obtained during these reactions

NUMBER 3

	i	Contributors to this issue
	775	Erratum
		TETRAHEDRON REPORT NUMBER 196
D. N. Kirk	777	The chiroptical properties of carbonyl compounds
Xu Xing-Xiang, Zhu Jie, Huang Da-Zhong and **Zhou Wei-Shan**	819	Total synthesis of arteannuin and deoxyarteannuin
Tadashi Teshima, Yasuyuki Ueki, Takahisa Nakai, Tetsuo Shiba and **Mikio Kikuchi**	829	Structure determination of lepidopteran, self-defense substance produced by silkworm
Hubert Bader and **Hans-Ulrich Reissig**	835	The first 4-dialkylamino-1,2-dihydropyridine derivatives: synthesis and basic reactions
R. Gompper and **R. Guggenberger**	839	Alkylthio-substituted (aza)fulvalenes
R. Gompper and **R. Guggenberger**	849	(Aza)dithiafulvalenes as π-electron donors
Bharat Singh, A. K. Samant, B. B. L. Saxena and **M. B. Singh**	857	Kinetics of oxidation of ketoglutaric acids by alkaline chloramine-T solution
S. Ramakanth, K. Narayanan, K. K. Balasubramanian and **K. Rajagopalan**	863	A novel photochemical ring contraction of 11a-methylpterocarpans
Ruggero Curci, Rossella Mello and **Luigino Troisi**	877	On the reactivity of silylperoxides. Oxidation of thioxane and of N,N-dimethyl-para-anisidine by bis(trimethylsilyl)peroxide and by tert-butyl(trimethylsilyl)peroxide
Oreste Piccolo, Lucio Filippini, Laura Tinucci, Ermanno Valoti and **Attilio Citterio**	885	Boron trichloride catalyzed ortho carbonylation of phenols: synthesis of 2-hydroxy-aryl-carboxyamides and -ketones
Cesare Gennari, M. Grazia Beretta, Anna Bernardi, Giorgio Moro, Carlo Scolastico and **Roberto Todeschini**	893	Lewis acid mediated aldol condensations using thioester silyl ketene acetals

Branko Juršič, Mladen Ladika and **Dionis E. Sunko**	911	Solvolysis of 2-(2-methoxyethyl)-3-methyl-2-cyclohexenyl *p*-nitrobenzoate. A case of non-participation of methoxy group
Giuliana Cardillo, Mario Orena, Sergio Sandri and **Claudia Tomasini**	917	A novel, efficient synthesis of (±)-erythro-sphingosine
M. Burdisso, A. Gamba, R. Gandolfi and **R. Oberti**	923	Site selectivity in the reaction of tetracyanoethene with tetracyclo-[5.3.2.$0^{2,10}$.$0^{3,6}$]dodeca-4,8,11-triene. A borderline case of homo-Diels–Alder reaction
G. Langbein, H.-J. Siemann, I. Gruner und **Ch. Müller**	937	Beiträge zur Cyclopropan-ringöffnung in 5β,19-Cyclosteroiden

NUMBER 4

TETRAHEDRON SYMPOSIA-IN-PRINT NUMBER 25

FORMAL TRANSFERS OF HYDRIDE FROM CARBON–HYDROGEN BONDS

Guest Editor: JAMES D. WUEST

Université de Montréal, Canada

	i	Contributors to this issue
	vii	Announcement: Tetrahedron Symposia-in-Print
	xi	Preface
P. M. T. de Kok, M. C. A. Donkersloot, P. M. van Lier, G. H. W. M. Meulendijks, L. A. M. Bastiaansen, H. J. G. van Hooff, J. A. Kanters and **H. M. Buck**	941	Stereoselective hydride uptake in model systems related to the redox-couple NAD^+/NADH
Atsuyoshi Ohno, Masanori Kashiwagi, Yuji Ishihara, Satoshi Ushida and **Shinzaburo Oka**	961	NAD(P)$^+$–NAD(P)H models—57. Stereochemistry in (net) hydride transfer from and to NAD(P)$^+$–NAD(P)H models: chirality sink
J. W. Verhoeven, W. van Gerresheim, F. M. Martens and **S. M. van der Kerk**	975	Mechanism and transition-state structure of hydride-transfer reactions mediated by NAD(P)H-models
Jonathan E. C. Hutchins, David A. Binder and **Maurice M. Kreevoy**	993	Dehydrogenation of formate by 10-methylacridinium ion
John W. Bunting and **Judy L. Bolton**	1007	Relative reactivities of heteroaromatic cations towards reduction by 1,4-dihydronicotinamides
Shunichi Fukuzumi, Masashi Ishikawa and **Toshio Tanaka**	1021	Mechanism of acid-catalysed reduction of aromatic aldehydes and *p*-benzoquinone derivatives by an NADH model compound
David Laurie, Edward Lucas, Derek C. Nonhebel, Colin J. Suckling and **John C. Walton**	1035	On the mechanism of hydrogen transfer by nicotinamide coenzymes and some dehydrogenases
I. Watt, S. N. Whittleton and **S. M. Whitworth**	1047	Cation and concentration dependence of anionic rearrangements involving hydride shifts
R. P. Kirchen, T. S. Sorensen, K. Wagstaff and **A. M. Walker**	1063	The characterization of and the evolution of molecular hydrogen by the μ-hydrido-bridged cyclodecyl cation. Relevance to the question of hydrocarbon protonation by superacids
George M. Kramer	1071	Catalysis of hydride transfer in strong acids

Yu. N. Bubnov, M. E. Gurskii, A. I. Grandberg and **D. G. Pershin**	1079	Regioselective β-hydride transfer in reactions of ate complexes of boron bicyclic and cage compounds. Synthesis of methylenecyclohexane derivatives
Robert S. Bly, Ruta K. Bly, M. Mahmun Hossain, Gary S. Silverman and **Easley Wallace**	1093	Reactions of $(CO)_2(\eta^5\text{-}C_5H_5)Fe$ alkyls and $Ph_3C^+BF_4^-$: a search for hydrogen-atom abstraction following one-electron-transfer
Savas Georgiou and **J. A. Gladysz**	1109	Reactions of organorhenium complexes $(\eta^5\text{-}C_5H_5)Re(NO)(PPh_3)(CH_2R)$ with $Ph_3C^+PF_6^-$; analysis of the energetics of α-hydride abstraction

TETRAHEDRON PAPERS

Bradford C. Vanwagenen and **John H. Cardellina II**	1117	Native American food and medicinal plants—7. Antimicrobial tetronic acids from *Lomatium dissectum*
Brian G. Dixon and **Andrew T. Au**	1123	Hydrolysis of cyanohydrin esters
W. Hendel, Z. H. Khan and **W. Schmidt**	1127	Hexa-peri-benzocoronene, a candidate for the origin of the diffuse interstellar visible absorption bands
Herbert Frauenrath and **Thomas Philipps**	1135	A simple diastereoselective synthesis of (±)-eldanolide
Harjit Singh, Sunil K. Aggarwal and **Nageshwar Malhotra**	1139	Extrusion reactions—VIII. A facile synthesis of 4-alkyl quinazolines and 1-methyl-2-aryl-4-quinolones
Luisa Benati, P. Carlo Montevecchi and **Piero Spagnolo**	1145	Boron trifluoride promoted reaction of benzenesulphenanilides with alkenes
Vishunu S. Shukla, Nabin C. Barua, Pritish K. Chowdhury, Ram P. Sharma, Manobjyoti Bordoloi and **Urszula Rychlewska**	1157	Absolute stereochemistry of the cadinenes from *Eupatorium trapezoideum*
J. L. Guinamant et **A. Robert**	1169	Réaction des dicyanoépoxydes avec les réactifs binucléophiles azotés ou avec leurs halohydrates. Nouvelles synthèses en série imidazole et imidazole condense
H. E. Audier, G. Sozzi et **J. P. Denhez**	1179	Réactions unimoléculaires des cations radicaux $[CH_3(CH_2)_{n-1}-NH_2]^{+\cdot}$ en phase gazeuse
R. El Gharbi, M. Delmas et **A. Gaset**	1191	Condensation d'alcènes aromatiques avec des aldéhydes catalysée par des résines échangeuses d'ions—III. Cas des aldéhydes aliphatiques
R. El Gharbi, M. Delmas et **A. Gaset**	1199	Condensation d'alcènes aromatiques avec des aldéhydes catalysée par des résines échangeuses d'ions—IV. Cas des aldéhydes aromatiques

NUMBER 5

i Contributors to this issue

ii Obituary

TETRAHEDRON REPORT NUMBER 197

Alain Krief	1209	Syntheses of tetraheterofulvalenes and of vinylene triheterocarbonates—strategy and practice
Eusebio Juaristi, Josefina Tapia and **Rodolfo Mendez**	1253	Study of the anomeric effect in 2-substituted 1,3-dithianes

Kangnian Fan and **James E. Boggs**	1265	Theoretical prediction of vibrational spectra: the harmonic force field and the vibrational spectrum of 4-methylpyridine
Motoo Tori, Reiko Matsuda and **Yoshinori Asakawa**	1275	The reaction of dammarane triterpenes with *m*-chloroperbenzoic acid
Michael Feldhues and **Hans J. Schäfer**	1285	Selective mixed coupling of carboxylic acids—III. Synthesis of cyclopentadecanone from cyclic tetraacyl diperoxides
Armin de Meijere, Horst Wenck, Fereydoun Seyed-Mahdavi, Heinz Günter Viehe, Vincent Gallez and **Ihsan Erden**	1291	Cycloadditions of methylenecyclopropanes and strained bicyclo-[n.1.0]alkanes to radicophilic olefins
Michal W. Majchrzak and **Gerhard Simchen**	1299	β-Silylation of N-alkylpyrroles, experimental support of theoretical calculations
J. Jakupovic, S. Banerjee, F. Bohlmann, R. M. King and **H. Robinson**	1305	New diterpenes from *Chiliotrichium rosmarinifolium* and *Nardophyllum lanatum*
E. Monnier, J. M. Botella, A. Murillo, A. Klaébé et **J. Périé**	1315	Hydrolyse basique comparée d'esters allophaniques et phosphoriques en milieu mixte acétonitrile/eau faiblement aqueux; mise en évidence d'une entité catalytique, intermédiaire de la réaction entre base et solvant
Norbert Bluthe, Jacques Gore and **Max Malacria**	1333	Silver mediated acetylenic oxy Cope rearrangement
Jean Rigaudy, Nguyen Kim Cuong, Joële Baranne-Lafont, Philippe Duminy et **Claude Chassagnard**	1345	α,α′-Diacylstilbènes (*Z*): un nouvel exemple de tautomérie cycle-chaîne. Diacétalisation en milieu neutre
Jean Rigaudy, Jacques Barcelo et **Marie-Hélène Valt-Taphanel**	1355	Cyclo-addition des dérivés nitrosés aromatiques aux cyclopentadiénones. Dualité réactionnelle chez les dérivés dialkylés en 2,5
S. Sebti and **A. Foucaud**	1361	Anionic activation by fluoride ion in solid–liquid systems. Synthesis of 3(2H)-furanones and 2(5H)-furanones
N. Jabri, A. Alexakis and **J. F. Normant**	1369	Palladium mediated synthesis of conjugated *E* or *Z* enones and unsymmetrical divinyl ketones. One-pot preparation of isoegomaketone
René Beugelmans et **Michèle Bois-Choussy**	1381	Réactions $S_{RN}1$—15. Action de sulfanions sur la chloro-5 iodo-7 hydroxy-8 quinoléine
J. P. Foulon, M. Bourgain-Commerçon and **J. F. Normant**	1389	Vinyl copper derivatives—29. Addition of α-silylated organocopper reagents to alkynes, access to γ-silylated vinyl copper reagents
J. P. Foulon, M. Bourgain-Commerçon and **J. F. Normant**	1399	Vinyl copper derivatives—30. Reactivity of γ-silylated vinyl copper reagents
J. P. Alazard, A. Leboff et **C. Thal**	1407	Cycloaddition dipolaire-1,3 du CEFNO en série cyclopenta[*c*]dihydro-3,4 pyranne
François Leyendecker et **Marie-Thérèse Comte**	1413	Chimie des fragrances—I. Nouvelle stratègie de synthèse de α-(2-oxo-cyclohexyl)-acrylates de méthyle
E. Brunet, M. T. Gallego, J. L. García Ruano and **F. Alcudia**	1423	Stereochemistry of organic sulfur compounds—20. Conformational analysis of aminosulfoxides and sulfones
Anders Kjaer, Dana Kjaer and **Troels Skrydstrup**	1439	Synthesis and properties of some stereoisomeric long-chain 1,2,3,4-tetrols
Harjit Singh and **Rakesh Sarin**	1449	Carbon transfer reactions of Δ^2-oxazolinium and thiazolinium cations
Basri Atasoy and **Metin Balci**	1461	Cycloaddition reactions of 5H-benzocycloheptene with singlet oxygen and with 4-phenyl-1,2,4-triazoline-3,5-dione, and the chemistry of the 5H-benzocycloheptene endoperoxides
R. Kawęcki and **L. Kozerski**	1469	The synthesis and structure of β-enamino sulphoxides

Marcello Tiecco, Marco Tingoli, Lorenzo Testaferri, Donatella Chianelli and Ernest Wenkert	1475	Total synthesis of orellanine. The lethal toxin of *Cortinarius orellanus* Fries mushroom
V. K. Bhalerao, B. S. Nanjundiah, H. R. Sonawane and P. M. Nair	1487	Photolysis of 2-phenylethyl and 4-phenyl-1-butyl halides in alcoholic solvents
J. Hidalgo Toledo, M. Balon Almeida, M. A. Muñoz Perez and M. C. Carmona Guzman	1497	Ionization equilibria of Rauwolfia alkaloids in concentrated hydroxide solutions
Mauri Lounasmaa and Pekka Somersalo	1501	Studies on the synthesis of indole alkaloids of condylocarpine type. C-4 alkylation of the 1-alkyl-3-(hydrazono)-2-piperidone system
Andrzej Frankowski	1511	Synthesis of imidazo[4,5-*c*]pyridine and imidazo[4,5-*d*][1,2]diazepine systems and their ribonucleosides
H. K. Müller, L. Keil und W. Gerhard	1529	Enantiomere der 2,2′-Dinitrobiphenyl-6,6′-dicarbonsäure als stereoselektiv wirksame, reversible Schutzgruppen—I. Zur stereospezifität der synthesen von *S*-(+)- und *R*-(−)-Noradrenalin und Adrenalin
H. K. Müller und J. Burgold	1533	Enantiomere der 2,2′-Dinitrobiphenyl-6,6′-dicarbonsäure als stereoselektiv wirksame, reversible Schutzgruppen—II. Stereoselektive synthesen von lipidgrundkörpern oder -bausteinen
A. Hirwe, K. G. Marathe, S. S. Mohorkar, K. Ramdas and C. B. Singh	1539	Stereoselectivity at benzylic carbon. Flavanoids—V. Synthesis of *trans*-4-acetamidoflavans
V. Lusis, D. Muceniece and G. Duburs	1547	Synthesis of 1,9a-dihydro-9a-substituted fluorenones and their 4-aza analogues

NUMBER 6

TETRAHEDRON SYMPOSIA-IN-PRINT NUMBER 26

SYNTHESIS OF NON-NATURAL PRODUCTS: CHALLENGE AND REWARD

Guest Editor: PHILIP E. EATON

University of Chicago, U.S.A.

	i	Contributors to this issue
	ix	Announcement: Tetrahedron Symposia-in-Print
	xiii	Preface
V. Bhaskar Rao, Steven Wolff and William C. Agosta	1549	Synthesis of [4.4.5.5]fenestrane
Hans-Dieter Becker and Kjell Andersson	1555	Novel polycyclic aromatic hydrocarbons by intramolecular Diels–Alder reaction: from lepidopterenes to benzenobenzopentaphenes via dianthrylethanes
David M. Birney and Jerome A. Berson	1561	Synthesis of the covalent benzene–carbon monoxide cycloadduct, norborna-2,5-dien-7-one. Correlation of kinetic and thermodynamic stabilities in cycloreversion reactions
L. W. Jenneskens, W. H. De Wolf and F. Bickelhaupt	1571	Scope and limitations of the flash vacuum thermolysis approach to small [*n*]paracyclophanes
W. E. Billups and Long-Jin Lin	1575	Uses of adsorbed reagents in the synthesis of reactive molecules via elimination reactions

George E. Renzoni, Tyze-Kuan Yin, Fumio Miyake and **Weston Thatcher Borden**	1581	A novel synthesis of β-lactone precursors of pyramidalized alkenes
Manfred Christl, Reinhard Lang and **Clemens Herzog**	1585	The synthesis of octavalene (tricyclo[5.1.0.$0^{2,8}$]octa-3,5-diene) and several substituted octavalenes
M. Venkatachalam, M. N. Deshpande, M. Jawdosiuk, G. Kubiak, S. Wehrli, J. M. Cook and **Ulrich Weiss**	1597	General approach for the synthesis of polyquinenes
Donald J. Cram and **Patrick Yuk-Sun Lam**	1607	Host–guest complexation—37. Synthesis and binding properties of a transacylase partial mimic with imidazole and benzyl alcohol in place
Stanley J. Cristol	1617	The synthesis of quadricyclenes. A retrospective look
Philip E. Eaton, Yat Sun Or, Stephen J. Branca and **B. K. Ravi Shankar**	1621	The synthesis of pentaprismane
C. David Gutsche and **Lee-gin Lin**	1633	Calixarenes 12. The synthesis of functionalized calixarenes
Harold Hart, Abdollah Bashir-Hashemi, Jihmei Luo and **Mary Ann Meador**	1641	Iptycenes. Extended triptycenes
Henning Hopf, Friedrich-Wilhelm Raulfs and **Dietmar Schomburg**	1655	Cyclophanes—XXV. [2.2]Indenophanes—potential building blocks for oligomeric ferrocenophanes
Wolfram Geuder, Siegfried Hünig and **Adolf Suchy**	1665	Single and double bridged viologenes and intramolecular pimerization of their cation radicals
Noboru Koga, Yuzo Kawada and **Hiizu Iwamura**	1679	Synthesis of 9,10-bis(9-triptycyloxy)triptycenes. Molecular design of a system with doubly correlated internal rotation
M. Luyten and **R. Keese**	1687	Planoid distortions in bridged spirocompounds. Formation of (all-*cis*)-[5.5.5.5]fenestrane in the attempted synthesis of the (*cis,cis, cis,trans*)-isomer
Adolf Krebs, Bernd Kaletta, Wolf-Ulrich Nickel, Wolfgang Rüger and **Liane Tikwe**	1693	En route to tetra-t-butylethylene
James A. Marshall, Vicki H. Audia, Todd M. Jenson and **Wayne C. Guida**	1703	Jump rope rotation in *trans*-cycloalkenes
Herbert Meier, Norbert Hanold, Thomas Molz, Hans Joachim Bissinger, Heinz Kolshorn and **Johannes Zountsas**	1711	Strained cycloalkenynes
Holger Butenschön and **Armin de Meijere**	1721	The first carbonyl iron complexes with dihydroacepentalene ligands
Hiroyuki Higuchi, Eiji Kobayashi, Yoshiteru Sakata and **Soichi Misumi**	1731	Photodimerization of benzenes in strained dihetera[3.3]metacyclophanes
Reginald H. Mitchell, Mahima Chaudhary, Toshihiro Kamada, Paul D. Slowey and **Richard Vaughan Williams**	1741	*cis*-Dimethyldihydropyrene synthesis. An approach utilizing a Diels–Alder route to 1,2,3-trisubstituted benzenes
Ichiro Murata, Yoshikazu Sugihara, Takashi Sugimura and **Shigeharu Wakabayashi**	1745	Valence isomers of azulene and heptalene
Reinhard Stober, Hans Musso and **Eiji Ōsawa**	1757	Hydrogenolysis of cubane
Koichiro Naemura, Yukio Hokura and **Masao Nakazaki**	1763	Synthesis of (+)-1,3,5,7-tetrakis[2-(1*S*,3*S*,5*R*,6*S*,8*R*,10*R*)-D_3-trishomocubanylbuta-1,3-diynyl]adamantane. The first optically active organic molecule with T symmetry and of known absolute configuration

Stephen F. Nelsen, Silas C. Blackstock and **Timothy B. Frigo**	1769	Proton-driven Diels–Alder reaction of azo compounds with cyclic dienes
Michael N. Paddon-Row, Evangelo Cotsaris and **Harish K. Patney**	1779	The synthesis of rigid norbornylogs for the purpose of studying orbital interactions through bonds
Leo A. Paquette, Tina M. Kravetz and **Pana Charumilind**	1789	The 1,7-cyclohexenonorbornadiene system
W.-D. Fessner and **H. Prinzbach**	1797	D_3-Trishomocubanetrione. Synthesis and optical resolution
H. Quast, E. Geissler, A. Mayer, L. M. Jackman and **K. L. Colson**	1805	Synthesis and degenerate Cope rearrangement of 2,6-diphenylbarbaralane
Manfred Böhshar, Heinrich Heydt and **Manfred Regitz**	1815	Diazo compounds—66. 5-(Diazomethyl)-5H-dibenzo[a,d]cycloheptenes—intermediates on the way to new dibenzosemibullvalene and dibenzocyclooctene syntheses
Lawrence T. Scott and **Mohammed M. Hashemi**	1823	1,7-Bridged homotropylium cations. New evidence on the dimensions of the homoconjugation gap in homotropylium cations
Elena Carceller, M. Lluïsa Garcia, Albert Moyano, Miquel A. Pericàs and **Fèlix Serratosa**	1831	Synthesis of triquinacene derivatives. New approach towards the synthesis of dodecahedrane
K. J. Shea, L. D. Burke and **Robert J. Doedens**	1841	Synthesis and structural studies of bridgehead dienes. 3-Oxobicyclo-[6.3.1]dodeca-1(11),8(9)-diene-(ZZ)-11-carboxylic acid and 3-oxobicyclo[7.3.1]trideca-1(12),9(10)-diene-(ZZ)-12-carboxylic acid
Theodora Butkowskyj-Walkiw and **Günter Szeimies**	1845	Synthesis of some [4.1.1]- and [3.1.1]propellanes with silicon, phosphorus, sulfur, titanium, germaniun, or tin in the long bridge
Yoshito Tobe, Ken-ichi Ueda, Kiyomi Kakiuchi, Yoshinobu Odaira, Yasushi Kai and **Nobutami Kasai**	1851	Synthesis, structure and reactivities of [6]paracyclophanes
W. Kiggen, F. Vögtle, S. Franken and **H. Puff**	1859	Large oligocyclic cavities for strong cation complexation
William V. Dower and **K. Peter C. Vollhardt**	1873	Thermal conversion of 1,5,9-triynes. [2+2+2]Cycloadditions or [3.3] sigmatropic shifts?
David M. Walba, Joseph D. Armstrong, III, Ann E. Perry, Rodney M. Richards, Timothy C. Homan and **R. Curtis Haltiwanger**	1883	The THYME polyethers. An approach to the synthesis of a molecular knotted ring
Kenneth B. Wiberg, Michael G. Matturro, Paul J. Okarma, Mark E. Jason, William P. Dailey, George J. Burgmaier, William F. Bailey and **Philip Warner**	1895	Bicyclo[2.2.0]hex-1(4)-ene
A. J. H. Klunder, G. J. A. Ariaans, E. A. R. M. v.d. Loop and **B. Zwanenburg**	1903	Control of cage opening reactions in the 1,3-bishomocubane and homocubane systems

NUMBER 7

	i	Contributors to this issue
		TETRAHEDRON REPORT NUMBER 198
Nelson J. Leonard and **Shivayogi P. Hiremath**	1917	Dimensional probes of binding and activity

Eusebio Juaristi, Barbara Gordillo and **Lucia Valle**	1963	Relative reactivity of 2-diphenylphosphinoyl- and 2-diphenylthiophosphinoyl-2-[1,3]dithianyllithium as reagents Wittig–Horner/Corey–Seebach
Hiromichi Tanaka, Masashi Hirayama, Masahiro Suzuki, Tadashi Miyasaka, Akira Matsuda and **Tohru Ueda**	1971	A lithiation route to C-5 substitution of an imidazole nucleoside and its application to the synthesis of 3-deazaguanosine
Thomas C. W. Mak, Yu Chi Yip and **Tien-Yau Luh**	1981	Wagner–Meerwein rearrangement of the homocubylcarbinyl system, and X-ray structure of 1-bromo-4,4-diphenyl-5-methoxypentacyclo-[5.3.0.$0^{2,6}$.$0^{3,9}$.$0^{5,8}$]decan-10-one ethylene ketal
Wataru Ando, Yukio Hanyu, Yorio Kumamoto and **Toshikazu Takata**	1989	Synthesis of diisopropylidenethiirane (thiiranoradialene) and its reactions
Shigeyoshi Nishino, Hatsuko Takamura and **Yoshiharu Ishido**	1995	Regioselective protection of carbohydrate derivatives—20. Simple, efficient 2′-*O*-deacylation of fully acylated purine and pyrimidine ribonucleosides through *tert*-butoxide
Robert Dhal, Yahia Nabi et **Eric Brown**	2005	Etudes de lignanes—7. Synthèses totales des (±)-α et -β-conidendrines et des méthyl (±)-α et -β-conidendrals
J. Pornet, D. Damour et **L. Miginiac**	2017	Synthèse et réactivité de silanes propargyliques ω-fonctionnels: préparation de vinylidène-3 oxolannes, oxannes, oxépannes et oxocannes
Patrick Metzner, Thi Nhan Pham and **Jean Vialle**	2025	Access to diethylenic dithioesters by thio-Claisen rearrangement. Further examples of reversibility of the Claisen rearrangement
Claude Agami and **Catherine Puchot**	2037	Stereochemistry—61. Amino acid-catalyzed enantioselective dehydration of cyclic β-ketols
Giambattista Consiglio, Oreste Piccolo, Lucia Roncetti and **Franco Morandini**	2043	Asymmetric nickel-catalyzed cross-coupling reaction of allylic substrates with Grignard reagents
Stefan Berger	2055	Investigations to charge dependence of $^{13}C^{13}C$ spin–spin coupling constants—aminobenzoic acids and their ionic species
Janos Fischer, Claus Kilpert, Ulrich Klein and **Wolfgang Steglich**	2063	Stereochemistry of [3.3]-sigmatropic rearrangements in the oxazole series
R. S. Mali, Sharadbala D. Patil and **S. L. Patil**	2075	Novel syntheses of 1-substituted-7,8-dialkoxyisochroman-3-ones and 8-substituted-2,3,9,10-tetramethoxyberbines
Maria Grazia Corradini, Alessandra Napolitano and **Giuseppe Prota**	2083	A biosynthetic approach to the structure of eumelanins. The isolation of oligomers from 5,6-dihydroxy-1-methylindole
Arturo Arduini, Andrea Pochini, Sara Reverberi, Rocco Ungaro, Giovanni D. Andreetti and **Franco Ugozzoli**	2089	The preparation and properties of a new lipophilic sodium selective ether ester ligand derived from *p*-t-butylcalix[4]arene
R. J. Abraham, S. L. R. Ellison, P. Schonholzer and **W. A. Thomas**	2101	A theoretical and crystallographic study of the geometries and conformations of fluoro-olefins as peptide analogues
David A. Widdowson and **Ying-Zhi Zhang**	2111	Unsymmetrical biaryl synthesis: an approach to natural highly functionalised biaryls via palladium catalysed coupling
Giancarlo Bettoni, Carla Cellucci, Savina Ferorelli, Roberto Perrone and **Vincenzo Tortorella**	2117	Synthesis of rigid dopamine congeners: *cis* and *trans* 2-(*p*-methoxyphenyl)-3-methylmorpholine
P. Molina, A. Lorenzo, R. M. Claramunt and **J. Elguero**	2121	Preparation and reactivity of mesoionic 1,2,4-triazolo[4,3-b]-1,2,4-triazole derivatives
Rita Annunziata, Mauro Cinquini, Franco Cozzi and **Laura Raimondi**	2129	Regioselective deprotonation of 3-methyl-4, 5-dihydroisoxazoles and diastereoselective reaction with electrophiles

NUMBER 8

i Contributors to this issue

TETRAHEDRON REPORT NUMBER 199

J. I. G. Cadogan, Clare L. Hickson and **Hamish McNab** 2135 Short contact time reactions of large organic free radicals

---

T. G. Savino, V. P. Senthilnathan and **M. S. Platz** 2167 Contrasting chemistry of diphenylcarbene and fluorenylidene in cyclohexane

Ai Jeng Lin, Anthony D. Theoharides and **Daniel L. Klayman** 2181 Thermal decomposition products of dihydroartemisinin (*dihydroqinghaosu*)

Essie Kariv-Miller and **Ryszard I. Pacut** 2185 Electroreduction in aqueous media, saturation of polycyclic aromatics

Soichi Sakane, Junya Fujiwara, Keiji Maruoka and **Hisashi Yamamoto** 2193 Chiral leaving group: asymmetric synthesis of limonene and bisabolene

Soichi Sakane, Keiji Maruoka and **Hisashi Yamamoto** 2203 Asymmetric cyclization of unsaturated aldehydes catalyzed by a chiral Lewis acid

Naohiro Shirai, Kiyoshi Moriya and **Yutaka Kawazoe** 2211 pH dependence of hydrolytic removal of silyl group from trialkylsilyl ethers

W. Offermann, W. Kuhn, J. Stelten, D. Leibfritz, G. v. Kiedrowski and **L. F. Tietze** 2215 Towards automated structure elucidation—1. Stereostructure of a synthetic cannabinoid

Wolfgang Eberbach and **Joachim Roser** 2221 Thermally initiated reactions of (*Z*)-epoxyhexenynes. A facile preparation of 3,4-annulated furans

Dieter Enders and **Beatrice E. M. Rendenbach** 2235 Asymmetric Michael additions via SAMP-/RAMP-hydrazones. Enantioselective synthesis of pheromones of the small forest ant (*Formica polyctena*) and the red wood ant (*F. rufa*)

Michel Giffard, Jack Cousseau, Lucien Gouin et **Marie-Renee Crahe** 2243 Addition de l'acide thiocyanique aux acétyléniques à l'aide de Hg(II)—II. Obtention d'isothiocyanates vinyliques par mercuration-protodémercuration

M. Mallet et **G. Queguiner** 2253 Homotransmétallation des halogéno-3 pyridines bromées en -2 ou -4 par le n-butyllithium. Proposition d'un nouveau mécanisme de télésubstitution du brome

X. Coqueret, F. Bourelle-Wargnier et **J. Chuche** 2263 Thermolyse de N,N-diméthyl hydrazinopropénoates. Préparation d'ylures d'oxopyrazolinium et de pyrazolinones-5

A. Robert, S. Jaguelin et **J. L. Guinamant** 2275 Synthèses d'esters ou d'acides α-halogénés à partir des gem dicyano époxydes

Hadj Benhaoua, Fernand Texier et **R. Carrié** 2283 Addition de cyano-2 aziridines, ylures d'azométhine potentiels aux isocyanates

C. Chuit, R. J. P. Corriu, R. Perz et **C. Reye** 2293 Réactions de Michaël sur des amides α,β insaturés activées par le système $CsF/Si(OCH_3)_4$

Nguyen Chi Hung et **Emile Bisagni** 2303 Autre voie d'accès aux 5H-pyrido[3′,4′:4,5]pyrrolo[3,2-*c*]pyridines et leur transformation en dérivés N-5 et N-8 substitués

Emile Bisagni et **Nguyen Chi Hung** 2311 Première synthèse de méthyl-4-5H-pyrido[3′,4′:4,5]pyrrolo[3,2-*c*]-pyridines, analogues tricycliques des aza-9 ellipticines

Derek H. R. Barton, Jean-Pierre Finet and **Martial Thomas**	2319	Organotellurinic acid anhydrides as selective oxidants in organic synthesis
Derek H. R. Barton, Brigitte Lacher and **Samir Z. Zard**	2325	The invention of new radical chain reactions—XIII. Generation and reactivity of perfluoroalkyl radicals from thiohydroxamic esters
Derek H. R. Barton, David Crich, Antonius Löbberding and **Samir Z. Zard**	2329	On the mechanism of the deoxygenation of secondary alcohols by the reduction of their methyl xanthates by tin hydrides
Geoffrey Darnbrough, Philip Knowles, Sean P. O'Connor and **Francis J. Tierney**	2339	New reactions of 1,3,5-trialkyl-hexahydro-1,3,5-triazines—1. The formation of 3,7-diazabicyclo[3,3,1]nona-2,6-diones and hexahydropyrimidines using activated acetates
Ferenc Fülöp, György Csirinyi, Sándor Szalma and **Gábor Bernáth**	2345	Stereochemical studies—97. Saturated heterocycles—99. An unusual ring-opening reaction of 2-methylthio-3,1-perhydrobenzoxazines. A comparative study of the 3,1 and 1,3-isomers
Andrew J. Carpenter and **Derek J. Chadwick**	2351	High-yielding syntheses of 4(5)-substituted imidazoles via organolithium intermediates. The utility of sulphonamide *N*-protection and silicon-containing blocking groups
György Dombi, Jorma Mattinen, Kalevi Pihlaja and **Jozsef Czombos**	2359	Configurations and conformations of isomeric 3-methyl-2,4-dioxabicyclo[3.3.1]nonanes—their preparation and multinuclear and 2D NMR study
Romualdo Caputo, Carla Ferreri, Giovanni Palumbo and **Giuseppe Capozzi**	2369	The reaction of ethanediyl S,S-acetals with halogens
Javier de Mendoza, Silvestre Garcia-Ochoa, Pilar Prados, Enrique Parra and **Jose Elguero**	2377	N,N′-Linked biazoles—7. Oxidative dimerization of N-unsubstituted tetrahydroindazolones

NUMBER 9

	i	Contributors to this issue
	2387	Erratum
		TETRAHEDRON REPORT NUMBER 200
Vinod K. Kansal and **Pierre Potier**	2389	The biogenetic, synthetic and biochemical aspects of ellipticine, an antitumor alkaloid
Md. Abdur Rahman, David R. Kelly, Prasad Ravi, Russell Underwood and **Bert Fraser-Reid**	2409	Controlled reduction and oxidation of actinobolin
A. S. R. Anjaneyulu, A. V. Rahgava Reddy, D. S. K. Reddy, T. Stanley Cameron and **S. P. Roe**	2417	Racemosol: a novel tetracyclic phenol from *Bauhinia racemosa* Lamk.
W. R. Ewing, B. D. Harris, K. L. Bhat and **M. M. Joullie'**	2421	Synthetic studies of the detoxin complex—I. Total synthesis of (−) detoxinine
A. Abad, C. Agulló, M. Arnó and **E. Seoane**	2429	Formation of 1-hydroxycyclopropanecarbonitrile ring in bicyclic systems
D. El Manouni, Y. Leroux et **R. Burgada**	2435	Réactions des cétones acétyléniques avec les phosphites et les aminophosphites en présence de réactifs de piégeage protiques. Synthèse, mécanisme de formation et stéréochimie d'ylures de phosphoranes monocycliques et de spirophosphoranes
Bernard Vigne, Alain Archelas, Jean Dominique Fourneron and **Roland Furstoss**	2451	Microbial transformations—4. Regioselective *para* hydroxylation of aromatic rings by the fungus *Beauveria sulfurescens*. The metabolism of isopropyl N-phenyl carbamate (Propham®)

Daniel Plusquellec, Fabienne Roulleau, Françoise Bertho, Martine Lefeuvre et **Eric Brown**	2457	Chimie des sucres sans groupements protecteurs—I. Estérification régiosélective de l'hydroxyle anomère du lactose, du maltose et du glucose
Marc Julia et **Jean-Pierre Stacino**	2469	Synthèses à l'aide de sulfones—XXXVII. Synthèse de trois phéromones à une double liaison *Z*: *Z*, 8-DDA; *Z*, 9-DDA; *Z*, 9-TDA
Marc Julia, Hélène Lauron, Jean-Pierre Stacino, Jean-Noël Verpeaux, Yves Jeannin and **Yves Dromzee**	2475	Organic synthesis with sulfones—XXXVIII. On the mechanism of the stereospecific hydrogenolysis of vinylic sulfones by sodium dithionite
M. Julia and **C. Schmitz**	2485	Prenylation of olefins in nitromethane
Marc Julia and **Christian Schmitz**	2491	Prenylation–cyclisation of geranyl acetate
J. Pornet, D. Damour, B. Randrianoelina et **L. Miginiac**	2501	Synthèse d'hétérocycles oxygénés à groupe vinylidène exocyclique par voie organosilicique—II. Préparation de vinylidène-5 dioxannes-1,3
Peter Heymanns and **Paul Rademacher**	2511	Electronic structures and thermolyses of 2-tetrazenes
Herbert Mayr, Elfriede Will, Ulrich W. Heigl and **Christian Schade**	2519	Bromination of octamethylcyclopentene—the irregular reactivity of a sterically hindered cycloalkene
Pál Sohár, János Kuszmann and **Ágnes Néder**	2523	Synthesis and NMR study of adamantane derivatives
Angelo Alberti, Gian Franco Pedulli, Rino Leardini, Antonio Tundo and **Giuseppe Zanardi**	2533	Radical adducts of dibenzofulvenes and 9-methylenanthrone—an ESR study
Felix H. Cano, C. Foces-Foces, Jesus Jimenez-Barbero. Antonio Alemany, Manuel Bernabe and **Manuel Martin-Lomas**	2539	The solid state and solution conformation of 1,2-*O*-alkylidene-α-D-ribopyranoses. Chirality assessment of pentoses from crystallographic torsion angles
Pnina Ashkenazi, Menachem Kaftory, Tuğmac Sayraç, Gunther Maier and **David Ginsburg**	2551	Propellanes—LXXXV. Confirmation of predicted regiospecificity in Diels–Alder reactions of certain propellanes with 4-phenyl-1,2,4-triazoline-3,5-dione
Moshe Kapon, Pnina Ashkenazi and **David Ginsburg**	2555	Propellanes—LXXXVI. The structures of the three isomeric [4.3.3]propellane-8,11-diols
David Ginsburg, Ludwig Stehling, Gunther Wilke, Reinhard Benn and **Richard Goddard**	2559	Propellanes—LXXXVII. The reaction of several tetraenic propellane-imides with cyclopentadienyl-cobalt-diethene
Giuseppe Bartoli, Renato Dalpozzo, Loris Grossi and **Paolo E. Todesco**	2563	Competition between addition and redox processes in reactions of nitroarenes with lithium-dithianes
Alan R. Katritzky and **Kunihiko Akutagawa**	2571	Carbon dioxide: a reagent for the protection of nucleophilic centres and the simultaneous activation of electrophilic attack—II. A new synthetic method for the 1-substitution of 1,2,3,4-tetrahydroisoquinolines
Jack E. Baldwin, Robert M. Adlington, Melchiorre F. Parisi and **Hong-Hoi Ting**	2575	The synthesis and antimicrobial activity of (1*S*,2*S*)-1-hydroxy-2-[(*S*)-valylamino]cyclobutane-1-acetic acid (**1**) and (1*S*,2*S*)-1-hydroxy-2-aminocyclobutane-1-acetic acid (**2**)

NUMBER 10

i Contributors to this issue

TETRAHEDRON REPORT NUMBER 201

Hani R. Seikaly and **Thomas T. Tidwell**	2587	Addition reactions of ketenes

Eugene M. Oltz, Koji Nakanishi, Boris Yagen, David G. Corley, George E. Rottinghaus and **Michael S. Tempesta**	2615	CD additivity in trichothecene benzoates: application as a micro-analytical method for trichothecene characterization
E. Gómez, C. Avendaño and **A. McKillop**	2625	Ethyl carboethoxyformimidate in heterocyclic chemistry
J. E. Safaryn, J. Chiarello, K.-M. Chen and **M. M. Joullie'**	2635	A convenient synthesis of (±) ascochlorin
Kenji Mori and **Hiroshi Tamura**	2643	A natural product was shown to be of low optical purity: synthesis of (2*S*,5*R*,6*E*,8*E*)-2,5-epoxy-6,8-megastigmadiene, its (6*Z*,8*E*)-isomer and (2*S*,6*R*,7*S*,8*E*)-2,7-epoxy-4,8-megastigmadiene, the constituents of *Osmanthus* absolute
Jun-ichiro Setsune, Takashi Ueda, Katsumi Shikata, Kimihiro Matsukawa, Toshiya Iida and **Teijiro Kitao**	2647	Synthesis of 2(3H)-benzofuranone derivatives by copper(I)-promoted substitution reactions of active methylene carbanions
G. Lamaty, J. P. Roque, A. Natat et **T. Silou**	2657	Réaction d'oximation des cétones—IV. Constantes d'équilibre de formation des carbinolamines intermédiaires: détermination et effets de structure
G. Lamaty, J. P. Roque, A. Natat et **T. Silou**	2667	Réactions d'oximation des cétones—V. Mécanisme et effets de structure dans la réaction de déshydratation acido-catalysée des carbinol-amines
Michel Klich et **Georges Teutsch**	2677	Synthèse de N-(tétrazol-5-yl) azetidin-2-ones
Germain Costerousse et **Georges Teutsch**	2685	Synthèse de la N-(1H-tétrazol-5-yl)-azétidin-2-one et de ses analogues 4-méthyl et 4-trifluorométhyl
Jean-Luc Bernier, Raymond Houssin and **Jean-Pierre Henichart**	2695	Analog of dolastatin 3. Synthesis, ^{1}H NMR studies and spatial conformation
Gernot Boche and **Reinhard H. Sommerlade**	2703	Oxidation of amines with bis-(diphenylphosphinyl)peroxide to give O-phosphinylated aminating reagents
Otmar Hofer, Harald Greger, Wolfgang Robien and **Andreas Werner**	2707	^{13}C NMR and ^{1}H lanthanide induced shifts of naturally occurring alkamides with cyclic amide moieties—amides from *Achillea falcata*
Miquel A. Pericas, Antoni Riera and **Joaquim Guilera**	2717	Synthesis and conformational analysis of glyoxal bis-dithioacetals: 1,4,5,8-tetrathiadecalin (hexahydro-1,4-dithiino[2,3-b]-1,4-dithiin) and *trans*-2,3-bis(methylthio)-1,4-dithiane
Luz Cardona, Isabel Fernandez, Begoña Garcia and **Jose R. Pedro**	2725	Synthesis of natural polyhydroxystilbenes
V. Balasubramaniyan, P. Balasubramaniyan and **A. S. Shaikh**	2731	Reactions of *o*-aminothiophenol with α,β-unsaturated dicarbonyl systems. Facile synthesis of benzothiazines and benzothiazepines
J. P. Sharma, R. N. P. Singh, A. K. Singh and **Bharat Singh**	2739	Kinetics and mechanism of Ru(III) catalysed oxidation of some polyhydric alcohols by *N*-bromosuccinimide in acidic media
Bharat Singh and **Rohit Shrivastav**	2749	Kinetics and mechanism of oxidation by some ketones by *N*-bromoacetamide
R. Uma, K. Rajagopalan and **S. Swaminathan**	2757	Base catalysed rearrangement of oxy-Cope systems
Charles O. Okafor	2771	A new type of angular phenothiazine ring system

NUMBER 11

TETRAHEDRON SYMPOSIA-IN-PRINT NUMBER 27

NEW SYNTHETIC METHODS—II

Guest Editor: F. E. ZIEGLER

Yale University, U.S.A.

i Contributors to this issue

ii Editorial Notice

vii Announcement: Tetrahedron Symposia-in-Print

xi Preface

Dale L. Boger and **Christine E. Brotherton** 2777 Diels–Alder cycloaddition reactions of cyclopropenone ketals. Dual participation in inverse electron demand ($LUMO_{diene}$ controlled) and normal ($HOMO_{diene}$ controlled) Diels–Alder reactions. Approaches to the preparation of tropones

Steven D. Burke, David M. Armistead, Frank J. Schoenen and **John M. Fevig** 2787 An enolate Claisen route to C-pyranosides. Development and application to an ionophore synthon

Theodore Cohen and **Bao-Shan Guo** 2803 Reductive metallation. A general preparative method for hydrocarbon allylmetallic compounds

Samuel J. Danishefsky, Michael P. DeNinno, Gary B. Phillips, Robert E. Zelle and **Paul A. Lartey** 2809 On the communication of chirality from furanose and pyranose rings to monosaccharide side chains: anomalous results in the glucose series

Scott E. Denmark, Karl L. Habermas, Gary A. Hite and **Todd K. Jones** 2821 Silicon-directed Nazarov cyclizations—IV. Further studies in stereochemical control

Raymond L. Funk, Matthew M. Abelman and **John D. Munger, Jr.** 2831 Claisen-rearrangement-mediated ring contraction of macrocyclic lactones. A new approach to carbocycles and heterocycles

Paul A. Grieco, Paul Galatsis and **Ronald F. Spohn** 2847 Aqueous intermolecular Diels–Alder chemistry. Reaction of (*E*)-2,4-pentadienyl ammonium chloride and related ammonium salts with dienophiles in water

Thomas R. Hoye and **Joseph C. Suhadolnik** 2855 Stereocontrolled synthesis of 2,5-linked bistetrahydrofurans via the triepoxide cascade reaction

Minoru Isobe, Yoshiyasu Ichikawa, Yasunori Funabashi, Shigeru Mio and **Toshio Goto** 2863 Acyclic stereocontrol by heteroconjugate addition—4. *Anti*-diastereoselection by a β-chelation effect

Bruce H. Lipshutz, David A. Parker, Sam L. Nguyen, Keith E. McCarthy, John C. Barton, Scott E. Whitney and **Hiyoshizo Kotsuki** 2873 Reactions of stoichiometric higher order, mixed lithio magnesio organocuprates

Robert J. Hamilton, Lewis N. Mander and **S. Paul Sethi** 2881 Improved methods for the reductive alkylation of methoxybenzoic acids and esters: applications to the synthesis of bicyclic ketones

James A. Marshall, James E. Audia, Jonathan Grote and **Barry G. Shearer** 2893 Diels–Alder cyclization of 2,8,10-undecatrienals as a route to 1,2,3,4,4a,5,6,8a-octahydronaphthalenes

Stephen F. Martin, Brigitte Benage, Sidney A. Williamson and **Stephen P. Brown**	2903	Applications of the intramolecular Diels–Alder reactions of heterodienes to the syntheses of indole alkaloids
Kōichi Mikami, Naoyuki Kishi, Takeshi Nakai and **Yoshiji Fujita**	2911	New sigmatropic sequences based on the [2,3]-Wittig rearrangement of the bis-allylic ether system. A general approach to regiocontrolled C–C bond formation of allylic moieties leading to unsaturated carbonyl compounds
Gary H. Posner, Moshe Weitzberg, Terence G. Hamill, Edward Asirvatham, He Cun-heng and **Jon Clardy**	2919	Asymmetric Michael additions of ester enolates to enantiomerically pure vinylic sulfoxides. Synthesis of 3-substituted glutarate esters in high enantiomeric purity
M. T. Reetz, S. H. Kyung and **M. Hüllmann**	2931	$CH_3Li/TiCl_4$: a non-basic and highly selective Grignard analogue
Yuichi Kobayashi, Yasunori Kitano, Yoshiyuki Takeda and **Fumie Sato**	2937	Diastereo- and enantioselective preparation of β-alkylhomoallylic alcohols. Synthesis of serricornin and corynomycolic acid
Stuart L. Schreiber, Bernard Hulin and **Wai-Fong Liew**	2945	Iron/copper promoted fragmentation reactions of α-alkoxy hydroperoxides. Regio- and stereocontrolled formation of olefin-containing macrolides
Barry B. Snider and **Boris E. Goldman**	2951	Sequential ene reactions—II. Synthesis of bicyclic adducts with angular methyl groups. *In situ* Oppenauer oxidation
Amos B. Smith, III, Melean Visnick, John N. Haseltine and **Paul A. Sprengeler**	2957	Organometallic reagents in synthesis. A new protocol for construction of the indole nucleus
Ichiro Minami, Kazuhiko Takahashi, Isao Shimizu, Tsuneo Kimura and **Jiro Tsuji**	2971	New synthetic methods for α,β-unsaturated ketones, aldehydes, esters and lactones by the palladium-catalyzed reactions of silyl enol ethers, ketene silyl acetals, and enol acetates with allyl carbonates
Ravi S. Garigipati, Robert Cordova, Masood Parvez and **Steven M. Weinreb**	2979	Diastereoselective synthesis of highly functionalized homoallylic amine derivatives via Diels–Alder adducts of N-sulfinyl dienophiles
Paul A. Wender and **Christopher B. Cooper**	2985	The photochemistry of 1-alkenylbenzotriazoles. Methodology for the synthesis of indoles
James K. Whitesell, Apurba Bhattacharya, Charles M. Buchanan, H. H. Chen, Don Deyo, Dustin James, Chi-Ling Liu and **Mark A. Minton**	2993	Asymmetric induction in the ene reaction of glyoxylate esters of 8-phenylmenthol
David R. Williams, James G. Phillips, Franklin H. White and **John C. Huffman**	3003	Studies of stereochemical control using α-lithiosulfinyl carbanions
David R. Williams and **James G. Phillips**	3013	A route to stereochemically complex tetrahydrofurans using α-sulfinyl carbanions
Kiyoshi Horita, Tadao Yoshioka, Tatsuyoshi Tanaka, Yuji Oikawa and **Osamu Yonemitsu**	3021	On the selectivity of deprotection of benzyl, MPM (4-methoxybenzyl) and DMPM (3,4-dimethoxybenzyl) protecting groups for hydroxy functions

NUMBER 12

i Contributors to this issue

ii Editorial Notice

TETRAHEDRON REPORT NUMBER 202

R. Karl Dieter 3029 α-Oxo ketene dithioacetals and related compounds: versatile three-carbon synthons

---

Jack E. Baldwin, Masami Otsuka and Philip M. Wallace 3097 Synthetic studies on tabtoxin. Synthesis of a naturally occurring inhibitor of glutamine synthetase, tabtoxinine-β-lactam, and analogues

Derek H. R. Barton, Neerja Yadav Bhatnagar, Jean-Pierre Finet and William B. Motherwell 3111 Pentavalent organobismuth reagents—VI. Comparative migratory aptitudes of aryl groups in the arylation of phenols and enols by pentavalent bismuth reagents

Paul C. Anderson, Alan R. Battersby, Hugo A. Broadbent, Christopher J. R. Fookes and Graham J. Hart 3123 Biosynthesis of porphyrins and related macrocycles—27. Syntheses of modified hydroxymethylbilanes and studies of their chemical and biological properties

Ernest W. Colvin and Ian G. Thom 3137 A synthetic approach to the trichothecene deoxynivalenol

Leslie Crombie and Brian S. Roughley 3147 Unsymmetrical connective olefination by Kornblum nitro-synthesis: applications in phytuberin chemistry

L. S. Trifonov, H. Hilpert, P. Floersheim, A. S. Dreiding, D. M. Rast, R. Skrivanova and L. Hoesch 3157 Bisvertinols: a new group of dimeric vertinoids from *Verticillium intertextum*

Ian Fleming and Michael Rowley 3181 The stereochemistry of the intramolecular electrophilic attack of an aldehyde on a carbon–tin bond

Andrei Zlota, Pnina Ashkenazi, Moshe Kapon and David Ginsburg 3199 Propellanes—LXXXVIII. Hydroxylation of 11,13-dioxo-12-methyl-12-aza[4.3.3]propella-3,8-diene with osmium tetroxide

Kumyul S. Albone, Jake MacMillan, Andrew R. Pitt and Christine L. Willis 3203 Isotope labelling in ring A of gibberellin A_{20}

Philip Magnus, Paul Pappalardo and Ian Southwell 3215 Methods for indole alkaloid synthesis: reactions of *N*-arylsulfonyl-enamines with electrophiles. An expeditious synthesis of (±)-eburnamonine

F. McCapra, P. D. Leeson, V. Donovan and G. Perry 3223 The reactions of flavin analogues and other heterocycles as models for bacterial bioluminescence

Ferdinand Naef and Rene Decorzant 3245 Grignard and hydride addition to a ketene intermediate: a novel access to α-damascone and α-cyclocitral

Robert Ramage and Angus M. MacLeod 3251 Synthesis of disodium prephenate

A. Roderick MacKenzie, Christopher J. Moody and Charles W. Rees 3259 Synthesis of the bacterial coenzyme methoxatin

A. I. Scott, N. E. Mackenzie, J. P. G. Malthouse, W. U. Primrose, P. E. Fagerness, A. Brisson, Le Zong Qi, W. Bode, Carl M. Carter and Yi Jin Jang 3269 Inhibition of trypsin by carbobenzyloxylysyl chloromethyl ketone: ^{13}C NMR and X-ray diffraction analyses of the enzyme–inhibitor complex

Roger L. Snowden	3277	The intramolecular Diels–Alder reactions of (*E*)- and (*Z*)-methyl 5-[2-methyl-4-(trimethylsilyloxy)-2,4-cyclopentadienyl]-2-pentenoate. A stereoselective synthesis of (±)-sativene
Ashwani Kumar, Sivapathasuntharam Mageswaran and **Ian O. Sutherland**	3291	The formation of complexes by asymmetrical tricyclic hosts
Gareth A. Morris, Khairuzzaman B. Mullah and **James K. Sutherland**	3303	Some experiments with aminodihydroxyanthraquinones
Alan F. Thomas and **Celia Perret**	3311	4-(1-Hydroperoxy-1-methylethyl)-1,3-cyclopentadienyl methyl ketone: its formation from α-terpineol and behaviour as a dimethylfulvene epoxide
Barry M. Trost and **Henk Hiemstra**	3323	Synthetic studies toward taxanes. A sulfur based approach to the benzilic acid rearrangement
T.-W. Christina Leung, Dudley H. Williams, Jennifer C. J. Barna, Salvatore Foti and **Peter B. Oelrichs**	3333	Structural studies on the peptide moroidin from *Laportea moroides*

NUMBER 13

	i	Contributors to this issue
	ii	Editorial Notice
	3349	Errata
		TETRAHEDRON REPORT NUMBER 203
J. Bryan Jones	3351	Enzymes in organic synthesis
Spencer Knapp, Mark J. Sebastian, Halasya Ramanathan, Parimal Bharadwaj and **Joseph A. Potenza**	3405	Synthesis of (−)-fortamine and (+)-2-deoxyfortamine from resolved 3*S*,4*S*-N-carbomethoxy-3-aminocyclohexen-4-ol
A. G. Pinkus and **R. Gopalan**	3411	Acid-catalyzed iodination of a hindered alkyl aryl ketone: 2,4,6-trimethylacetophenone (1). Rate dependence on iodine concentration
William F. Reynolds, Stewart McLean, Janusz Poplawski, Raul G. Enriquez, Laura I. Escobar and **Ismael Leon**	3419	Total assignment of ^{13}C and ^{1}H spectra of three isomeric triterpenol derivatives by 2D NMR: an investigation of the potential utility of ^{1}H chemical shifts in structural investigations of complex natural products
William E. Fristad, John R. Peterson, Andreas B. Ernst and **Gordon B. Urbi**	3429	Mechanisms for manganese(III) oxidations with alkenes
Balan Chenera, Usha Venkitachalam, Donald Ward and **William Reusch**	3443	Total synthesis of tetracyclic triterpenes—2. An efficient synthesis of 1,4-dimethoxy-14α-methyl-11-oxoestra-1,3,5(10)-triene
T. Tokuyama, N. Nishimori, I. L. Karle, M. W. Edwards and **J. W. Daly**	3453	Alkaloids from dendrobatid poison frogs: *trans*-decahydroquinolines and indolizidines
Shunichi Manabe and **Chikao Nishino**	3461	Stereochemistry of *cis*-clerodane diterpenes

Kenji Mori and **Takashi Ebata**	3471	Syntheses of optically active pheromones with an epoxy ring, (+)-disparlure and both the enantiomers of (3*Z*,6*Z*)-*cis*-9,10-epoxy-3,6-heneicosadiene
Patrick Rollin and **Jean-René Pougny**	3479	Synthesis of (6*Z*)-*cis*-9*S*,10*R*-epoxyheneicosene, a component of the ruby tiger moth pheromone
Humberto Cervantes, Duc Do Khac, Marcel Fetizon, Frédéric Guir, Jean-Claude Beloeil, Jean-Yves Lallemand and **Thierry Prange**	3491	Model studies in the taxane diterpene series—I
C. Picard, L. Cazaux et **P. Tisnes**	3503	Synthèse de dilactones macrocycliques assistée par les organostanniques. Application aux macrocycles soufrés (sulfures, sulfoxydes, disulfures) complexation sélective de l'ion CA^{2+}
L. Labaudiniere et **R. Burgada**	3521	Evolution thermique de vinylphosphoranes
Francis Pochat	3537	Etude de l'isomèrie de N-(oxo-2-(1H)-pyridyl-6)aminométhylene cyanacétates, et de leur cyclisation en pyrido[1,2-a]pyrimidines
Heinz Herzog, Hartmut Koch, Hans-Dieter Scharf and **Jan Runsink**	3547	Chiral induction in photochemical reactions—V. Regio- and diastereoselectivity in the photochemical [2+2] cycloaddition of chiral cyclenone-3-carboxylates with 1,1′-diethoxyethene
Jan Epsztajn, Adam Bieniek, Jacek Z. Brzezinski and **Hans-Otto Kalinowski**	3559	The conformational analysis of benzocycloalkanones using the lanthanide induced shift method
Eckehard V. Dehmlow, Rainer Thieser, Yoel Sasson and **Ronny Neumann**	3569	Diols as effective cocatalysts in the phase transfer catalyzed preparation of 1-alkynes from 1,2-dihalides
Helmut Hofmeister, Henry Laurent, Paul-Eberhard Schulze and **Rudolf Wiechert**	3575	Synthesis of 17α-bromovinyl- and 17α-iodovinylnortestosterone derivatives
Bruno M. Giannetti, Bert Steffan, Wolfgang Steglich, Wolfram Quack and **Timm Anke**	3579	Antibiotics from basidiomycetes—23. Merulidial, an isolactarane derivative from *Merulius tremellosus*
Bruno M. Giannetti, Bert Steffan, Wolfgang Steglich, Jutta Kupka and **Timm Anke**	3587	Antibiotics from basidiomycetes—24. Antibiotics with a rearranged hirsutane skeleton from *Pleurotellus hypnophilus* (Agaricales)
Andrzej E. Wróblewski	3595	Analogues of branched-chain tetrafuranosides having phosphorus in the anomeric position
F. Bernardi, L. Lunazzi, A. Ricci, G. Seconi and **G. Tonachini**	3607	A C-13 NMR and theoretical study of the electronic structure of acylsilanes
I. Gonzalez Collado, F. A. Macias, G. M. Massanet and **F. Rodriguez Luis**	3611	Structure, chemistry and stereochemistry of clementeins, sesquiterpene lactones from *Centaurea clementei*
Francisco Camps, Gemma Fabrias and **Angel Guerrero**	3623	Synthesis of a fluorinated analog of the sex pheromone of the processionary moth *Thaumetopoea pityocampa* (Denis and Schiff.)
N. G. Argyropoulos, J. K. Gallos and **D. N. Nicolaides**	3631	Reactions of furoxans with phosphorus ylides
Carmen Almansa, Elena Carceller, Albert Moyano and **Felix Serratosa**	3637	Synthesis of tricyclo(5.2.1.$0^{4,10}$)decane-2,5,8-trione from Deslongchamps's diketone

Gerardo Palla, Giovanni Predieri, Paolo Domiano, Carlo Vignali and **Walter Turner**	3649	Conformational behaviour and *E*/*Z* isomerization of *N*-acyl and *N*-aroylhydrazones
Miguel Carda, Manuel Arnó and **J. Alberto Marco**	3655	Total syntheses of rothin-A and rothin-B
Francis M. Dean, Leonard E. Houghton, Gordon H. Mitchell, Rassoul Nayyir-Mashir and **Chachanat Thebtaranonth**	3663	Cage ketones from dimethyl-1,4-benzoquinones and quinonoid carbanions; a charge-transfer controlled synthesis
Carla Cauletti, Giorgio Di Maio, Weimin Li, Elisabetta Vecchi and **Tomas Vondrák**	3677	Substituent effects on ionization energies in some 4*R*-substituted cyclohexanones
Tadeusz Jagodziński, Elżbieta Jagodzińska and **Zygfryd Jabłoński**	3683	A Friedel–Crafts synthesis of N-substituted thiophenecarbothioamides
Jan Bergman, Anna Brynolf and **Eino Vuorinen**	3689	A new synthesis of 4-amino-2-quinolinones
Jan Bergman, Anna Brynolf, Björn Elman and **Eino Vuorinen**	3697	Synthesis of quinazolines
Karl Anker Jørgensen	3707	MO studies on the structure of thianthrene and its cation radicals (the ground state and first excited states) and some of their chemical properties
W. A. Laurie, D. McHale and **K. Saag**	3711	Photoreactions of quinine in aqueous citric acid solution
Francisco Fariña, M. Carmen Maestro, M. Rosario Martín, M. Victoria Martín, Félix Sánchez and **M. Luisa Soria**	3715	Pseudoesters and derivatives—XXIII. Reaction of 3-bromo-5-methoxyfuran-2(5*H*)-one with nucleophiles. Formation of cyclopropane derivatives
Martin P. Edwards, Annette M. Doherty, Steven V. Ley and **Helen M. Organ**	3723	Preparation of 2-substituted pyrroles and indoles by regioselective alkylation and deprotection of 1-(2-trimethylsilylethoxymethyl)pyrrole and 1-(2-trimethylsilylethoxymethyl)indole

NUMBER 14

i Contributors to this issue

ii Editorial Notice

TETRAHEDRON REPORT NUMBER 204

Brid M. Dilworth and **M. Anthony McKervey**	3731	Organic synthesis with α-chlorosulfides

Werner Hinz, R. Alan Jones, Sunil U. Patel and **Mary-Helen Karatza**	3753	Pyrrole studies—36. The synthesis of 2,2′-bipyrroles and related compounds
Richard C. Larock, Kentaro Takagi, Joseph P. Burkhart and **Susan S. Hershberger**	3759	Synthesis of polycyclic ketones via carbonylative cyclization of organopalladium compounds derived from norbornene and norbornadiene
William R. Dolbier, Jr., Daniel T. Daly and **Henryk Koroniak**	3763	The thermal isomerization and cleavage of *cis*-1,1,2,2-tetrafluoro-3,4-dimethylcyclobutane

Bruno Simoneau and **Paul Brassard**	3767	Reactions of ketene acetals—16. The regiospecific synthesis of partially methylated purpurins
Kiyoyuki Yamada, Hiroaki Tan, Hiroshi Tatematsu and **Makoto Ojika**	3775	Dictyoprolene and neodictyoprolene, two new odoriferous compounds from the brown alga *Dictyopteris prolifera*: structures and synthesis
Hideo Kigoshi, Yoshikazu Shizuri, Haruki Niwa and **Kiyoyuki Yamada**	3781	Four new C_{15} acetylenic polyenes of biogenetic significance from the red alga *Laurencia okamurai*: structures and synthesis
Hideo Kigoshi, Makoto Ojika, Yoshikazu Shizuri, Haruki Niwa and **Kiyoyuki Yamada**	3789	Isolation of (10*R*,11*R*)-(+)-squalene-10,11-epoxide from the red alga *Laurencia okamurai* and its enantioselective synthesis
Miwako Mori, Yasuhiro Uozumi, Masaya Kimura and **Yoshio Ban**	3793	Total syntheses of prothracarcin and tomaymycin by use of palladium catalyzed carbonylation
Takeshi Akasaka, Masaru Nakagawa, Yuko Nomura, Rikiya Sato, Kazuo Someno and **Wataru Ando**	3807	Reaction of singlet oxygen with 2-pyrazoline: implication for cation radical–superoxide ion pair intermediate
Y. Le Bigot, R. El Gharbi, M. Delmas et **A. Gaset**	3813	Réactions en milieu hétérogène solide–liquide faiblement hydraté—III. La réaction de Wittig dans le système carbonates alcalins/solvant organique protique
M. Cherest et **X. Lusinchi**	3825	Action du chlorure d'acétyle et de l'anhydride acétique sur le nitronate de lithium dérivé du phényl-2 nitroéthane. Réactivité électrophile ou dipolaire, en fonction du milieu, de l'oxyde de nitrile intermédiairement forme
M. Julia, H. Mestdagh et **C. Rolando**	3841	Une méthode simple de synthèse des phosphates terpéniques allyliques primaires et tertiaires
S. El-Baba, J. M. Nuzillard, J. C. Poulin and **H. B. Kagan**	3851	Asymmetric homogeneous reduction of dehydropeptides
A. Archelas, J. D. Fourneron, B. Vigne et **R. Furstoss**	3863	Transformations microbiologiques—6. Biohydroxylations dans la série du pinane
Jean-Luc Boucher et **Lucien Stella**	3871	Diénophilie des oléfines captodatives: cycloadditions de Diels–Alder de l'α-méthylthio-acrylonitrile et transformation des adduits
Christopher Glidewell, Douglas Lloyd and **Shirley Metcalfe**	3887	Some stable stibonium ylides. The use of bis(hexafluoroacetylacetonato)copper(II) as a homogeneous catalyst in the conversion of diazo-compounds into ylides
S. P. Vaidya and **U. R. Nayak**	3891	Unusual acetone solvation of a longibornane-based C-3 carbonyl in neighbouring group participation: unique reactivity of 12-bromolongibornane-3,4-dione
Antonio G. González, Rafael de la Rosa and **Juan M. Trujillo**	3899	Synthesis of new aryltetralin lignans
Francesco Babudri, Saverio Florio and **Ludovico Ronzini**	3905	Cross-coupling of 2-chlorobenzoxazole with β,γ-unsaturated Grignard reagents: regioselective synthesis of 2-allyl-, 2-allenyl-, and 2-propargyl-benzoxazoles
L. Di Nunno and **A. Scilimati**	3913	Decomposition of arylazides by THF/n-butyllithium—II. Isolation of 1-aryl-4,5-dihydro-5-hydroxy-1H-1,2,3-triazoles
Paul F. C. van der Meij, Ruth D. Lohmann, Eduard R. de Waard, Tjoe B. R. A. Chen and **Upendra K. Pandit**	3921	Models of folate coenzymes—16. Chemical modelling of the thymidylate synthase reaction. Evidence for an "exocyclic methylene intermediate" analogue, which is reducible to a thymine derivative, in the reaction of 6-aminouracils with a 5,10-methylenetetrahydrofolate model
M. Kajtár, M. Hollósi, J. Kajtár, Zs. Majer and **K. E. Kövér**	3931	Chiroptical properties and solution conformations of protected endothiodipeptide esters

Jack E. Baldwin, Alistair G. Swanson, Jin Kun Cha and **John A. Murphy**	3943	Preparation and pyrolysis of substituted ethanoanthracenes—a general synthesis of 2,3-disubstituted anthracenes
Mario Rubiralta, Miguel Feliz, Carlos Jaime and **Ernest Giralt**	3957	Determination of rotational barriers of $C(sp^2)-C(sp^3)$ bonds in 2-arylpiperidines—II. ^{1}H-DNMR and ^{13}C-DNMR studies of the *trans*-1,3-dimethyl-2-(3,4,5-trimethoxyphenyl)-4-piperidone
G. B. V. Subramanian, Alka Mehrotra and **Kalpana Mehrotra**	3967	Enamine condensation on derivatives of aleuritic acid and synthesis of (*Z*)-9-tricosene (muscalure), its (*E*)-isomer, and (*E*)-13-heptacosene
Giancarlo Berti, Giorgio Catelani, Luigi Monti and **Giovanni Ventresca**	3973	The steric course of the reactions of 2,3-dihalotetrahydropyrans with Grignard reagents
Hans Malmberg and **Martin Nilsson**	3981	2-Arylpyridines from 2-pyridylcopper/triphenylphosphine and iodoarenes
Stephen G. Davies, Robert J. C. Easton, Asensio Gonzalez, Simon C. Preston, Kevin H. Sutton and **Jonathan C. Walker**	3987	Chiral dienolates: stereoselective formation and α-alkylation of the lithium dienolates derived from (*RS*)-*Z*-[$(\eta^5$-$C_5H_5)$Fe(CO)(PPh_3)COCH=CHCH$_2$R] (R = Me, Et, n-Pr) and (*RS*)-[$(\eta^5$-$C_5H_5)$Fe(CO)(PPh_3)(COCH=CMe$_2$)]
J. C. Sarma, M. Borbaruah, D. N. Sarma, N. C. Barua and **R. P. Sharma**	3999	Cleavages of ethers by chlorotrimethylsilane and acetic anhydride
Giovanni Petrillo, Marino Novi, Giacomo Garbarino and **Carlo Dell'Erba**	4007	A mild and efficient $S_{RN}1$ approach to diaryl sulfides from arenediazonium tetrafluoroborates
Josè Kaneti	4017	A MNDO study of olefin epoxidation by peroxyacids. Hammond effects on the computed transition structures
Alan R. Katritzky, Wei-Qiang Fan and **Kunihiko Akutagawa**	4027	Carbon dioxide: a reagent for the simultaneous protection of nucleophilic centres and the activation of alternative locations to electrophilic attack—III. A new synthetic method for the *ortho*-substitution of N-monoalkylanilines
M. Vandewalle, J. Van der Eycken, W. Oppolzer and **C. Vullioud**	4035	Iridoids: enantioselective synthesis of loganin via an asymmetric Diels-Alder reaction
V. K. Ahluwalia, H. R. Sharma and **Renu Tyagi**	4045	A novel one step synthesis of pyrano(2,3-d)pyrimidines
Ana Calvo-Mateo, María-José Camarasa and **Federico G. De las Heras**	4049	N-(Glucopyranosid-3-yl)-D-alanyl-L-alanyl-D-isoglutamine and related tripeptide analogues of muramyl dipeptide
G. Remaud, X-x. Zhou, C. J. Welch and **J. Chattopadhyaya**	4057	An assessment of the reactivity of guanosine and some of its derivatives to electrophiles by ^{15}N-NMR spectroscopy
R. V. Suresh, C. S. R. Iyer and **P. R. Iyer**	4069	Aromatic solvent-induced shifts of some dihydropyranochalcones—a model study to differentiate angular and linear dihydropyranoisoflavones
A. Castello, J. Cervello, J. Marquet, M. Moreno-Mañas and **X. Sirera**	4073	4-Nitropyrocatechol ethers as possible photoaffinity labels. Photochemical reactions of 4-nitropyrocatechol ethers of biologically active compounds
C. Nallaiah and **J. A. Strickson**	4083	Oxidation of aromatic amines with chromyl chloride—I. Oxidation of aromatic primary amines
C. Nallaiah and **J. A. Strickson**	4089	Oxidation of aromatic amines with chromyl chloride—II. Studies on the intermediate solid adducts

NUMBER 15

i Contributors to this issue

4093 Errata

TETRAHEDRON REPORT NUMBER 205

Jean-Pierre Rieu, André Boucherle, Henri Cousse and **Gilbert Mouzin** 4095 Methods for the synthesis of antiinflammatory 2-aryl propionic acids

---

S. Carranza R., C. Pérez G. and **S. Pérez G.** 4133 Study of alkyl nitrites oxidation with DMSO

Josefina Awruch and **Benjamin Frydman** 4137 The total synthesis of biliverdins of biological interest

Ivan L. Stoilov, Janice E. Thompson and **Carl Djerassi** 4147 Biosynthetic studies of marine lipids—7. Experimental demonstration of a double alkylation at C-28 in the biosynthesis of 24-isopropylcholesterols in a sponge

Ivan Stoilov, Thomas G. Back, Janice E. Thompson and **Carl Djerassi** 4156 Biosynthetic studies of marine lipids—8. Course of the stereoselective alkylation and regioselective hydrogen migration in the biosynthesis of the sponge sterol (24*S*)-24-isopropenylcholesterol

Li Donxia, Wu Dexian, Li Yaozhong and **Zhao Huaming** 4161 Kinetics and linear free energy relationship of Wittig reaction between substituted benzaldehydes and substituted benzylidenetriphenylphosphorane

K. Kanda, T. Koremoto and **A. Imamura** 4169 An analysis of the through-bond interaction using the localized molecular orbitals with *ab initio* calculations—IV. Role of relay orbitals in perpendicular π-systems

Hiroshi Tanimura, Mitsuo Sekine and **Tsujiaki Hata** 4179 Further development of oligoribonucleotide: bis(tributyltin) oxide as a reagent for removal of the internucleotidic phenylthio group via the phosphotriester approach

Hiromichi Tanaka, Hiroyuki Hayakawa, Kikoh Obi and **Tadashi Miyasaka** 4187 Synthetic route to 5-substituted uridines via a new type of desulfurizative stannylation

Hideshi Nakamura, Songzhi Deng, Jun'ichi Kobayashi, Yasushi Ohizumi and **Yoshimasa Hirata** 4197 Dictyoceratin-A and -B, novel antimicrobial terpenoids from the Okinawan marine sponge *Hippospongia* sp.

P. Canonne, D. Thibeault et **G. Fytas** 4203 Etude des réactions du di(bromomagnésio)-1,4 butane et du di(bromomagnésio)-1,5 pentane sur les isoxazolones-5 encombrées

Herbert Mayr and **Rudolf Pock** 4211 Electrophilic attack at allylsilanes: a quantitative determination of the β-silyl effect

Vince Szabó, János Borbély, Edit Theisz and **Sándor Nagy** 4215 Reaction of chromones with hydroxylamine in anhydrous methanol. A novel route for the preparation of chromone oximes

Jack E. Baldwin, Robert M. Adlington, Jeffrey C. Bottaro, Jayant N. Kolhe, Matthew W. D. Perry and **Ashok U. Jain** 4223 Azo anions in synthesis—1. t-Butylhydrazones as acyl-anion equivalents

Jack E. Baldwin, Robert M. Adlington, Jeffrey C. Bottaro, Jayant N. Kolhe, Ian M. Newington and **Matthew W. D. Perry** 4235 Azo anions in synthesis. Use of trityl- and diphenyl-4-pyridylmethylhydrazones for reductive C—C bond formation

Jack E. Baldwin, Robert M. Adlington, Ashok U. Jain, Jayant N. Kolhe and Matthew W. D. Perry 4247 Applications of the thermal ene reaction of aldehyde t-butyl- and phenylhydrazones

A. Gonzalez, J. Marquet and M. Moreno-Mañas 4253 Metal complexes in organic synthesis. Preparation of α-(1-adamantyl)-β-dicarbonyl compounds and 4-(1-adamantyl)-3,5-disubstituted pyrazoles and isoxazoles

David C. Ayres and Daniel P. Levy 4259 Oxidation of aromatic substrates—VII. The selective oxidation of phenolic alkenes with ruthenium tetroxide

Jens Wolff and Maurizio Taddei 4267 Some observations on the Brunner reaction

Francesco Cafieri, Ernesto Fattorusso, Luciano Mayol and Ciro Santacroce 4273 Structure of bromotetrasphaerol, a further irregular diterpene from the red alga *Sphaerococcus coronopifolius*

M. De Bernardi, G. Fronza, A. Scilingo, G. Vidari and P. Vita-Finzi 4277 Fungal metabolites—XX. Chemical correlation of lactarane and secolactarane sesquiterpenes. Absolute configuration of furosardonin A, lactaral and blennin C

J. Van der Eycken, P. De Clercq and M. Vandewalle 4285 Total synthesis of podophyllum lignans: an exploratory study

J. Van der Eycken, P. De Clercq and M. Vandewalle 4297 Total synthesis of (±)-podophyllotoxin and (±)-epipodophyllotoxin

Francisco Fariña, M. Carmen Paredes and Valter Stefani 4309 Polycyclic hydroxyquinones—XXIV. Diels–Alder reactions of 5-amino-8-hydroxy-1,4-naphthoquinone. Novel transcycloaddition reactions with derivatives of 1,4-dihydro-1,4-methanoanthracene-9,10-dione

Alba Pusino, Antonio Saba and Vittorio Rosnati 4319 Catalytic decomposition of branched α'-phenoxy-α-diazo ketones affording 2,8H-cyclohepta[b]furan-3-one and 2H-cyclohepta[b]furan-3a(3aH)methyl-3-one

M. Jayamani, Nalin Pant, S. Ananthan, K. Narayanan and C. N. Pillai 4325 Synthesis of indenes from phenylpropanones using alumina catalyst

Steven V. Ley, Barry Lygo, Francine Sternfeld and Anne Wonnacott 4333 Alkylation reactions of anions derived from 2-benzenesulphonyl tetrahydropyran and their application to spiroketal synthesis

A. G. Avent, P. A. Chaloner, K. A. Leonard and D. W. Young 4343 Dynamic behaviour of 2,2-dimethyl-3-formyl-4-carbonyl-4-thiazolinyl valine esters

Douglas J. Raber, Christopher M. Janks and Joop A. Peters 4347 $Eu(FOD)_3$ induced shifts of alkyl substituted adamantanones and molecular geometries of the adducts

M. Burdisso, A. Gamba, R. Gandolfi and P. Pevarello 4355 Site selectivity in the reactions of 1,3-dipoles and dienes with tetracyclo[5.3.2.$0^{2,10}$.$0^{3,6}$]dodeca-4,8,11-triene

NUMBER 16

i Tetrahedron prize for creativity in organic chemistry

iii Contributors to this issue

TETRAHEDRON REPORT NUMBER 206

Jiro Tsuji 4361 New general synthetic methods involving π-allylpalladium complexes as intermediates and neutral reaction conditions

P. V. Alston, R. M. Ottenbrite, O. F. Guner and **D. D. Shillady**	4403	A transition state FMO approach for prediction of the regioselectivity of the Diels–Alder reaction
Bülent Terem and **Paul J. Scheuer**	4409	Scalaradial derivatives from the nudibranch *Chromodoris youngbleuthi* and the sponge *Spongia oceania*
Kenji Mori and **Takashi Ebata**	4413	Synthesis of (2*S*,3*R*,1′*R*)-stegobinone, the pheromone of the drugstore beetle, with stereocontrol at C-2 and C-1′
Kenji Mori and **Takashi Ebata**	4421	Synthesis of all of the four possible stereoisomers of 5-hydroxy-4-methyl-3-heptanone (sitophilure), the aggregation pheromone of the rice weevil and the maize weevil
Kuni Wakamatsu, Tsuyoshi Nonaka, Yasuhiro Okuda, Werner Tückmantel, Koichiro Oshima, Kiitiro Utimoto and **Hitosi Nozaki**	4427	Transition-metal catalyzed silylzincation and silylalumination of acetylenic compounds
Zhou Wei-Shan, Zhang Lian, Fan Zhao-Chang and **Xu Xing-Xiang**	4437	Studies on structure and synthesis of arteannuin and related compound—XX. The structure of a new peroxidic arteannuin degradation product and the lactone configuration of related compound
J.-M. Vatele	4443	Synthetic studies on nogalamycin: stereospecific C-5 alkylations of a sugar derivative via Claisen rearrangement and a new route to 1,1,4-trialkoxybuta-1,3-dienes
F. Guéritte-Voegelein, V. Sénilh, B. David, D. Guénard and **P. Potier**	4451	Chemical studies of 10-deacetyl baccatin III. Hemisynthesis of taxol derivatives
Francis Pochat	4461	Accès aux alkyl (ou aryl)-4 diamino-3,6 pyrazolo[3,4-b]pyridines substituées en 5 par un groupe SR ou Cl
Nabin C. Barua and **Richard R. Schmidt**	4471	Stereoselective synthesis of the major component of a mosquito oviposition attractant pheromone from a β-lithiopropionate equivalent
Wolf-Rainer Abraham, Ludger Ernst, Ludger Witte, Hans-Peter Hanssen and **Ewald Sprecher**	4475	New trans-fused africanols from *Leptographium lundbergii*
Darshan Ranganathan, Firdous Farooqui, Dipti Bhattacharyya, Sanjiv Mehrotra and **K. Kesavan**	4481	The chemical simulation of the "ATP–imidazole" cycle
Renato Capasso, Giovanni Palumbo, Giacomino Randazzo, Alfonso Bavoso, Benedetto Di Blasio and **Vincenzo Pavone**	4493	Stereostructure and formation mechanism of a new substituted benzofuran from phomenone
David Tanner, Olof Wennerström, Ulf Norinder, Klaus Müllen and **Rainer Trinks**	4499	The dianion of [2.2.2]paracyclophene; a 20π-perimeter species?
Ralf Plate, Rutger J. F. Nivard and **Harry C. J. Ottenheijm**	4503	Conversion of indole into 3-S-(cysteinyl)indoles and 2-S-(cysteinyl)-tryptophans. An approach to tryptathionines
Ralf Plate and **Harry C. J. Ottenheijm**	4511	Synthesis of 2-(alkylthio)indoles
Dheeb Marji, Hasan Tashtoush and **Jamil Ibrahim**	4517	A novel synthesis of quinone-immonium dyes
A. V. Rama Rao, E. Rajarathnam Reddy, G. V. M. Sharma, P. Yadagiri and **J. S. Yadav**	4523	A stereoselective synthesis of coriolic acid and dimorphecolic acid
R. Thimma Reddy and **U. R. Nayak**	4533	Addition of hydrogen halides to isolongifolene: formation of novel sterically-diverted bicyclic monoolefinic primary halides
Vittorio Rosnati and **Aldo Salimbeni**	4541	Ring opening and ring–chain tautomerism in 2-carbalkoxy- and 2-acyl-2,3-dihydro-1,4-benzodioxins

Jerzy Ciosłowski, Andrzej Barański and **Tomaš Juška**	4549	A simple algorithm for the calculation of the π ionization energies of substituted benzenes
Sebastião J. Formosinho	4557	The effect of transition state bond order on sigmatropic shifts and cycloaddition reactions
J. de Pascual Teresa, J. G. Urones, A. Montaña Pedrero and **P. Basabe Barcala**	4563	Reactivity of methyl labdanolate with lead tetraacetate
Lorenzo Testaferri, Marcello Tiecco, Marco Tingoli and **Donatella Chianelli**	4577	Stereospecific synthesis of divinyl diselenides from vinyl acetyl selenides
P. de Vaal, G. Lodder and **J. Cornelisse**	4585	Intramolecular deuterium isotope effects in the *meta* photocycloaddition of aromatic compounds to alkenes
Marian Mikołajczyk, Piotr Kiełbasinski and **Anna Sut**	4591	Rearrangement of S-phosphorylisothioureas into N-phosphorylthioureas: stereochemistry at phosphorus and mechanism
Francisco Camps, José Coll and **Josefa Guitart**	4603	Regiospecific reduction of unsaturated conjugated ketones with sodium dithionite under phase transfer catalysis

NUMBER 17

	i	Tetrahedron prize for creativity in organic chemistry
	iii	Contributors to this issue
		TETRAHEDRON REPORT NUMBER 207
John Mann	4611	The synthetic utility of oxyallyl cations
Tze-Ming Chan, R. Friary, B. Pramanik, M. S. Puar, V. Seidl and **Andrew T. McPhail**	4661	Synthesis, structure, and reductive rearrangement of a novel tricyclic isoxazolidine
D. C. Neckers and **Jerzy Paczkowski**	4671	Micro-organizational control of photochemical oxidations: rose bengal and derivatives—XV
Kenji Mori and **Takashi Ebata**	4685	Synthesis of (2*S*,3*R*,1′*S*,2′*S*)-stegobiol, a new component of the drugstore beetle pheromone
Minoru Machida, Kazuaki Oda, Eiichi Yoshida and **Yuichi Kanaoka**	4691	Photoreaction of N-substituted monothiophthalimides with styrene derivatives. An example of formation and fission of the thietane ring
Kazuo Kamaike, Hiromichi Tsuchiya, Kazuaki Imai and **Hiroshi Takaku**	4701	Synthesis of 2′- or 3′-O-(4-methoxybenzyl) nucleosides and its application in the 3′-terminal nonanucleotide sequence of Rous Sarcoma Virus 35S RNA synthesis
Ikchoon Lee, Se Chul Sohn, Yu Jeoung Oh and **Byung Choon Lee**	4713	Nucleophilic substitution reaction of benzyl benzenesulfonates with anilines in methanol–acetonitrile mixtures—3
G. Haufe, A. Wolf and **K. Schulze**	4719	Transannular π-cyclization in electrophilic additions to 1,5-dimethylcycloocta-1,5-diene
Hubertus Ahlbrecht und **Gunther Schneider**	4729	Bestimmung der Ionenpaar-Basizität von Lithium- und Kaliumamiden
J. Chrisment, J. J. Delpeuch, W. Rajerison and **C. Selve**	4743	Amide hydrogen exchange rates of model peptides in dimethyl sulphoxide solutions
J. Berlan, Y. Besace, G. Pourcelot et **P. Cresson**	4757	Addition d'organocuprates aux oxazolidines chirales α-β éthyléniques—I. Résultats—effects de sel et de solvant

J. Berlan et Y. Besace	4767	Addition d'organocuprates aux oxazolidines chirales α-β éthyléniques—II. Nature des intermédiaires, mécanisme et stéréochimie
P. Duhamel, L. Hennequin, J. M. Poirier, G. Tavel and **C. Vottero**	4777	1,5-Dicarbonyl compounds. A general preparation method
M. Taran et B. Delmond	4787	Réarrangements d'époxydes-7,8 diterpéniques catalysés par l'éthérate de trifluorure de bore—III
M. Taran et B. Delmond	4795	Obtention de nouveaux squelettes diterpéniques tetracycliques lors d'isomérisation d'époxydes-8,9 diterpéniques—IV
C. Hervé du Penhoat and **M. Julia**	4807	Synthesis with sulfones—XLIV. Stereoselective preparation of *EE* 1,3-dienes by elimination of benzenesulfinic acid from *E* homoallylic sulfones
S. Walia, S. K. Kulshrestha and **S. K. Mukerjee**	4817	Photochemistry of latifolin and some related compounds
A. Messmer, A. Gelléri and **Gy. Hajós**	4827	Synthesis and nitrogen elimination of 3-aryltetrazolo(1,5-a)pyridinium salts and its angular benzenologues. Formation of N-arylamino-α-pyridones, -quinolones, -isoquinolones, and phenanthridones
Giorgio Di Maio, Weimin Li, Luisa Migneco and **Elisabetta Vecchi**	4837	Studies on the stereochemistry of addition reactions on cyclohexanones—VII. The effect of the axial ester group on the reactivity of *trans* 2-decalones
Mario Anastasia, Pietro Allevi, Pierangela Ciuffreda and **Raffaele Riccio**	4843	Configuration assignment of 24*R*- and 24*S*- isomers of 29-oxygenated steroids by ^{1}H and ^{13}C NMR spectroscopy
Salimuzzaman Siddiqui, Shaheen Faizi, Tariq Mahmood and **Bina S. Siddiqui**	4849	Margosinolide and isomargosinolide, two new tetranortriterpenoids from *Azadirachta indica* A. Juss (Meliaceae)
D. S. Mahadevappa, K. Mohan and **S. Ananda**	4857	Oxidation of aliphatic ketones by bromamine-B: a kinetic study
Subbu Perumal, Sakkiah Alagumalai, Sangavanaicker Selvaraj and **Natesan Arumugam**	4867	Kinetics and mechanism of oxidation of substituted phenyl methyl sulphides by N-bromoacetamide
Darshan Ranganathan, Ramesh Rathi, Krishnan Kesavan and **Waheguru Pal Singh**	4873	The demonstration of normal O→N Claisen rearrangement in purines
Jack E. Baldwin, Robert M. Adlington, Richard H. Jones, Christopher J. Schofield, Constantine Zaracostas and **Colin W. Greengrass**	4879	γ-Lactam analogues of carbapenicillanic acids
Marcello Tiecco, Donatella Chianelli, Lorenzo Testaferri, Marco Tingoli and **Donatella Bartoli**	4889	Competition between vinylic substitution and conjugate addition in the reactions of vinyl selenoxides and vinyl selenones with nucleophiles in DMF
Marcello Tiecco, Donatella Chianelli, Marco Tingoli, Lorenzo Testaferri and **Donatella Bartoli**	4897	Formation and reactivity of the addition products of alkoxides and thiolate anions to vinyl selenones

NUMBER 18

i Tetrahedron prize for creativity in organic chemistry

iii Contributors to this issue

4907 Erratum

TETRAHEDRON REPORT NUMBER 208

Terry Rosen and **Clayton H. Heathcock** — 4909 The synthesis of mevinic acids

---

M. De Min, M. T. Maurette, E. Oliveros, M. Hocquaux et **B. Jacquet** — 4953 Oxydation du naphtalènediol-1,5 par le superoxyde de potassium en phase hétérogène

Michel Zervos, Lya Wartski and **Jacqueline Seyden-Penne** — 4963 Aminonitrile and cyanohydrin ethers as benzoyl anion equivalents in conjugate additions to substituted α cyclenones: comparative synthetic potentialities

Robert Bloch and **Dominique Hassan-Gonzales** — 4975 Stereoselective preparation of conjugated dienoates and dienamides. New synthesis of pellitorine and pipercide

Derek H. R. Barton, Dominique Bridon, Yolande Hervé, Pierre Potier, Josiane Thierry and **Samir Z. Zard** — 4983 Concise syntheses of L-selenomethionine and of L-selenocystine using radical chain reactions

Marc Julia and **Pierre Roy** — 4991 Selective reduction of the distant double bond(s) in geranyl, farnesyl and geranyl geranyl derivatives

Marc Julia and **Pierre Roy** — 5003 Asymmetric reduction of farnesol

Sylvestre A. Julia and **Robert Lorne** — 5011 Reductions of steroidal halohydrins and their esters by tri-n-butyltin hydride; some stereospecific 1.2-migrations of acetoxy- or benzoxy-groups

Vittorio Bocchi and **Gerardo Palla** — 5019 Synthesis and characterization of new indole trimers and tetramers

Zbigniew J. Leśnikowski and **Anna Sibińska** — 5025 Studies on stereospecific formation of P-chiral internucleotide linkage. Synthesis of diastereoisomeric 2′-deoxyadenylyl(3′,5′)2′-deoxyadenylyl S-methylphosphorothioates via nucleoside hydroxyl activation

Stojan Stavber and **Marko Zupan** — 5035 Fluorination with caesium fluoroxysulphate. Room temperature fluorination of phenyl substituted olefins

Janusz Jurczak and **Tomasz Bauer** — 5045 Stereochemistry of Diels–Alder reaction at high-pressure: influence of pressure on asymmetric induction in (4 + 2)cycloaddition of 1-methoxybuta-1,3-diene to 2,3-O-isopropylidene-D-glyceraldehyde

W. Verboom, E. O. M. Orlemans, H. J. Berga, M. W. Scheltinga and **D. N. Reinhoudt** — 5053 Synthesis of dihydro-1H-pyrrolo- and tetrahydropyrido[1,2,-*a*]indoles via a modified Madelung reaction

A. V. Rama Rao, Subhash P. Chavan and **Latha Sivadasan** — 5065 Synthesis of lavendamycin

G. Remaud, J. Kjellberg, H. Bazin, N. G. Johansson and **J. Chattopadhyaya** — 5073 The use of ^{15}N-NMR spectroscopy for assigning the structures of isomeric N^7- and N^9-substituted purines

E. Malamidou-Xenikaki and **D. N. Nicolaides** — 5081 Synthesis of heterocyclic propellanes. Preparation and transannular reactions of 5-ethoxycarbonylmethylene-cyclooctanone and the corresponding oximes and hydrazones

John M. Brown, Stephen J. Cook, Richard H. Jones and **Riaz Khan** — 5089 Structural comparison of trehalose anomers: the X-ray crystal structures of $\alpha\alpha$-(2,3,4-tri-O-methyl-6-methanesulphonyl)glucopyranosyl-1-O-(2′,3′,4′-tri-O-methyl-6′-methanesulphonyl)glucopyranose, and its $\beta\beta$-isomer

John M. Brown, Stephen J. Cook and **Alexander G. Kent**	5097	Flexible *cis*- or *trans*-chelating biphosphine ligands derived from $\alpha\alpha$- or $\beta\beta$-trehalose
John M. Brown, Stephen J. Cook and **Riaz Khan**	5105	Hydroformylation catalysed by rhodium complexes of trehalose-derived ligands $\alpha\alpha$- and $\beta\beta$-TREDIP; a highly regioselective route to α-methylarylpropionaldehydes
G. van Beek, J. L. van der Baan, G. W. Klumpp and **F. Bickelhaupt**	5111	Total synthesis of C_{19}-diterpene alkaloids: construction of a functionalized BCD-ring system
Stephen G. Davies, Isabelle M. Dordor-Hedgecock, Kevin H. Sutton, Jonathan C. Walker, Richard H. Jones and **Keith Prout**	5123	The asymmetric sythesis of β-lactams. Stereocontrolled asymmetric tandem Michael additions and subsequent alkylations of *E*-[(η^5-C_5H_5)Fe(CO)(PPh_3)COCH=CHMe]. X-Ray crystal structure of (*RS*)-*E*-[(η^5-C_5H_5)Fe(CO)(PPh_3)COCH=CHMe]
Gábor Bernáth, Jenö Kóbor, Ferenc Fülöp, Pál Sohár, Gyula Argay and **Alajos Kálmán**	5139	Stereochemical studies—100. Saturated heterocycles—104. Synthesis, and NMR and X-ray study of 1-substituted azeto [2,1-*a*]isoquinoline diastereomers
X.-X. Zhou and **J. Chattopadhyaya**	5149	Site-specific modification of the pyrimidine residue during the deprotection of the fully-protected diuridylic acid

NUMBER 19

	i	Tetrahedron prize for creativity in organic chemistry
	iii	Contributors to this issue
		TETRAHEDRON REPORT NUMBER 209
J. W. ApSimon and **T. Lee Collier**	5157	Recent advances in asymmetric synthesis—II
Albert J. Fry and **Peter C. Fox**	5255	An improved correlation between polarographic reduction potential and Huckel LUMO energy. Application to non-benzenoid hydrocarbons
Patrizia Caldirola, Marco De Amici, Carlo De Micheli, Peter A Wade, David T. Price and **James F. Bereznak**	5267	Metal-hydride reduction of isoxazoline-3-carboxylate esters
Rikiya Sato, Hideki Sonobe, Takeshi Akasaka and **Wataru Ando**	5273	Singlet oxygen and triazolinedione addition to azines
Kenji Mori and **Hirosi Kisida**	5281	Synthisis of both the enantiomers of the heterocyclic pheromones isolated from the male swift moth *Hepialus hecta* L
He Wenchen and **He Wenjie**	5291	Generation and enumeration of planar polycyclic aromatic hydrocarbons
Toshiya Furuhata and **Wataru Ando**	5301	Nature of thioxyallyl intermediate in the decomposition of allene episulfide and pyrazoline-4-thione
M. J. Bourgeois, B. Maillard et **E. Montaudon**	5309	Déplacements homolytiques intramoléculaires—12. Décomposition induite de peroxydes ethyléniques: Influence de la longueur de la chaine
T. Cuvigny, C. Herve du Penhoat and **M. Julia**	5321	Syntheses with sulfones—XLV: Stereoselective preparation of 1-benzenesulfonyl-1,3,-dienes
T. Cuvigny, C. Herve du Penhoat and **M. Julia**	5329	Syntheses with sulfones—XLVI: Stereoselective preparation of 2-benzenesulfonyl-1,3-dienes and 2-benzenesulfonyl-1,4-dienes
Klaus Fischer and **Siegfried Hünig**	5337	A convenient route to 5-methyl-3,7-octadienic acid from 2,4-hexadienal via umpolung and double cope rearrangement

Horst Wingert, Gerhard Maas and **Manfred Regitz** 5341 Syntheses with cyclobutadienes—15. Prismane/Dewar benzene isomerization—X-ray crystal structure of tert-butyl 3,4,5-tri-tert-butyl-2,6-bis(trifluoromethyl)prismane-1-carboxylate

Y. Stefanovsky, TZ. Gospodova and **L. Viteva** 5355 Regio- and stereoselectivity in the addition of metal N,N-dimethylphenylacetamide enolates to some conjugated carbonyl compounds

Steven V. Ley, Ian A. O'Neil and **Caroline M.R. Low** 5363 Ultrasonic formation and reactions of sodium phenylselenide

Luciano Mayol, Vincenzo Piccialli and **Donato Sica** 5369 Metabolites from the marine sponge *Spongionella gracilis*. Three further nor-diterpenes, one of them based on a novel carbocyclic skeleton

Romualdo Caputo, Carla Ferreri and **Giovanni Palumbo** 5377 Thiosulfonic S-esters—5. Mechanistic aspects of the reaction with chlorotrimethylsilane and sodium iodide

E. Van der Eycken, A. De Bruyn, J. Van der Eycken, P. Callant and **M. Vandewalle** 5385 Iridoids: The structure elucidation of specionin based on chemical evidence and ^{1}H NMR analysis

A. Alemagna, C. Baldoli, E. Licandro, S. Maiorana and **A. Papagni** 5397 3-oxo-indazoline and 4-oxo-dihydroquinazoline derivatives from isatic acids

E. De Cock, M. Van Marsenilie, L. Van der Auwera, D. Tourwe and **G. Van Binst** 5403 A method for the determination of the configuration of the L-Pro-L,D-Phe pseudodipeptide isomers containing an *trans*-ethylene isosteric replacement of the peptide bond

Trevor A. Crabb and **Stephanie L. Soilleux** 5407 Microbiological transformations—9. Microbiological transformations of 1,2,5,6-tetrahydropyrrolo[3,2,1-i,j]-quinolin-4-one and of derivatives of 1,2,3,5,6,7-hexahydropyrido[3,2,1-i,j]quinoline with the fungus *Cunninghamella elegans*

A. Messmer, Gy. Hajós, A. Gelléri and **L. Radics** 5415 Synthesis and nitrogen elimination of the linearly fused tetrazolo-(1,5-b) isoquinolinium salts.
Formation of a new tetracycle: Indazolo(2,3-b)isoquinoline

T. Pathak, H. Bazin and **J. Chattopadhyaya** 5427 Synthesis of 2'-deoxy-2' (*S*)-deuterio and 2'deoxy-2'(*R*)-deuterio-β-D-nucleosides

Rita Annunziata, Mauro Cinquini, Franco Cozzi, Laura Raimondi and **Stefania Stefanelli** 5443 Stereoselective synthesis of (E)-2-alkene-1,4-diols via metallated allylic sulphoxides

Rita Annunziata, Mauro Cinquini, Franco Cozzi, Laura Raimondi and **Stefania Stefanelli** 5451 Stereoselective synthesis of polyols precursors by allyl sulphinyl anion addition to chiral alkoxy aldehydes

NUMBER 20

i Tetrahedron prize for creativity in organic chemistry

iii Contributors to this issue

5457 Erratum

TETRAHEDRON REPORT NUMBER 210

Michel Madesclaire 5459 Synthesis of sulfoxides by oxidation of thioethers

---

Herbert C. Brown and **Kenneth J. Murray** 5497 Organoboranes for synthesis—1. Protonolysis of trialkylboranes. A convenient non-catalytic conversion of alkenes into saturated compounds via hydroboration-protonolysis

Herbert C. Brown, Carl Snyder, B. C. Subba Rao and **George Zweifel** 5505 Organoboranes for synthesis—2. Oxidation of organoboranes with alkaline hydrogen peroxide as a convenient route for the *cis*-hydration of alkenes via hydroboration

Herbert C. Brown and **Chandra P. Garg** 5511 Organoboranes for synthesis—3. Oxidation of organoboranes with aqueous chromic acid. A convenient synthesis of ketones from alkenes via hydroboration

Herbert C. Brown, Surendra U. Kulkarni, C. Gundu Rao and **Vemanna D. Patil**	5515	Organoboranes for synthesis—4. Oxidation of organoboranes with pyridinium chlorochromate. A direct synthesis of aldehydes from terminal alkenes via hydroboration
Herbert C. Brown, M. Mark Midland and **George W. Kabalka**	5523	Organoboranes for synthesis—5. Stoichiometrically controlled reaction of organoboranes with oxygen under mild conditions to achieve quantitative conversion to alcohols
Kenji Mori and **Hideto Mori**	5531	Synthesis of both the enantiomers of O-methyl pisiferic acid, a mite growth regulator isolated from *Chamaecyparis pisifera* Endl
Kenji Mori and **Shigefumi Kuwahara**	5539	Synthesis of both the enantiomers of lardolure, the aggregation pheromone of the acarid mite, *Lardoglyphus konoi*
Kenji Mori and **Shigefumi Kuwahara**	5545	Stereochemistry of lardolure. The aggregation pheromone of the acarid mite, *Lardoglyphus konoi*
Kazumasa Wakamatsu, Hideo Kigoshi, Kenji Niiyama, Haruki Niwa and **Kiyoyuki Yamada**	5551	Stereocontrolled total synthesis of (+)-tutin and (+)-asteromurin A, toxic picrotoxane sesquiterpenes
J. Santamaria et **R. Ouchabane**	5559	Photooxydations par transfert d'electron. Photooxygènations sensibilisées par le dicyano-9,10 anthracéne. Formation de $O_2^{\cdot}$ et $^1O_2$
Fernando Bernardi, Andréa Bottoni, Jacques Fossey and **Jeanine Sorba**	5567	Fragment interaction analysis in the framework of ab-initio UHF-MO computations—IV. The second row effect in β-substituted ethyl radicals
Corinne Aubert, Jean-Pierre Bégué et **Jean-François Biellmann**	5581	$\beta'\beta$ anionic elimination of carboxylic esters
Robert J. P. Corriu, Gerard F. Lanneau and **Dominique Leclercq**	5591	Investigations of the nucleophilic displacement at the tetrahedral phosphorus. Kinetic effects of the nucleophile for a given stereochemistry
J. Court, H. Ioakimoglou, C. Lambeaux et **J. M. Bonnier**	5601	Mise en évidence de la déprotonation du complexe ipso-arénium obtenu en phénylation cationique du diméthyl-1,4 naphtalène
A. Alexakis, D. Jachiet, and **J. F. Normant**	5607	Boron fluoride promoted opening of epoxides by organocopper and cuprate reagents
F. R. Aquino Neto, J. M. Trendel and **P. Albrecht**	5621	Synthetic intermediates derived from triterpenoids by the retro-Michael reaction in the vapour phase
Derek H. R. Barton, Jean-Pierre Finet, William B. Motherwell and **Clotilde Pichon**	5627	The chemistry of pentavalent organobismuth reagents—IX. Cleavage reactions of α-glycols
Sándor Antus, Eszter Baitz-Gács, Günther Snatzke and **Judit Vas**	5637	Synthesis of grisan
F. Gaviña, S. V. Luis, P. Ferrer, A. M. Costero and **P. Gil**	5641	Arynic species—II. Tosyl and triazene as leaving group in the generation of arynes from polymer-bound reagents
I. Jalsovszky, F. Ruff, M. Kajtár-Peredy, I. Kövesdi and **Á. Kucsman**	5649	Stereoselective synthesis of *cis* and *trans* *N*-tosyl sulphilimines and sulphoxides from 2-alkylthianes and 2-alkylthiolanes assignments of configurations and preferred conformations
David Tanner and **Peter Somfai**	5657	New routes to perhydrohistrionicotoxin
Robin J. Breckenridge and **Colin J. Suckling**	5665	Enzyme inhibition by electrophilic cyclopropane derivatives
J. M. Verbeek, J. Cornelisse and **G. Lodder**	5679	Photolysis of the vinyl bromide 9-(α-bromobenzylidene)fluorene in methanol. Effect of wavelength of irradiation, sodium methoxide and oxygen.
George W. J. Fleet and **Paul W. Smith**	5685	The synthesis from D-xylose of the potent and specific enantiomeric glucosidase inhibitors, 1,4,-dideoxy-1,4-imino-D-arabinitol and 1,4-dideoxy-1,4-imino-L-arabinitol
Aryeh A. Frimer, Judith Hameiri-Buch, Shlomo Ripshtos and **Pessia Gilinsky-Sharon**	5693	A facile two-step high yield approach to 2-oxasteroids
Kalyan Kali Sen Gupta, Tapashi Samanta and **Samarendra Nath Basu**	5707	Kinetics and mechanism of the oxidation of some diols by chromium(VI) in perchloric acid medium

Arun K. Mandal, D. P. Borude, R. Armugasamy, N. R. Soni, D. G. Jawalkar, S. W. Mahajan, K. R. Ratnam and **A. D. Goghare**	5715	New synthetic route to (1R)-*cis*-(-)-permethrin, (IR)-*cis*-(+)-cypermethrin and (1R)-*cis*-(+)-deltamethrin (Decis) from (+)-3-carene
Alan R. Katritzky, Daryl L. Ostercamp and **Taher I. Yousaf**	5729	The mechanism of the Hantzsch pyridine synthesis: a study by ^{15}N and ^{13}C NMR spectroscopy
Srinivasaschari Rajappa and **Sharada J. Shenoy**	5739	Quinone-imides: regiospecificity of nucleophilic attack on *N*-alkanesulphonyl-*N'*-alkanoyl 1,4-benzoquinone-imines
M. Iqbal Choudhary, Atta-ur-Rahman, Alan J. Freyer and **Maurice Shamma**	5747	Five new steroidal alkaloids from *Buxus papilosa*. Some relationships between structures and specific rotations

NUMBER 21

	i	Contributors to this issue
		TETRAHEDRON REPORT NUMBER 211
V. Ramamurthy	5753	Organic photochemistry in organized media
H. Y. Elnagar, K. H. Chow, A. T. Johnson, R. Somanathan, P. Nunez, M. J. Watson, C. S. Parsons and **E. J. Grubbs**	5841	Acetolyses of 1-substituted *trans*-7,8-dichlorodibenzobicyclo [2.2.2] octadienes
Guy Casy, Mark Furber, Kevan A. Richardson, G. Richard Stephenson and **Richard J. K. Taylor**	5849	Alkylation reactions of propargyl alcohol; improved routes to prostaglandin α-side chain precursors
Mario C. Cardozo, Maria T. Pizzorno, S. M. Albonico and **Adriana B. Pierini**	5857	A theoretical study of regioselectivity and synchronicity of 1,3 dipolar cycloaddition reactions
William R. Ewing, Krishna L. Bhat and **Madeleine M. Joullie**	5863	Synthetic studies of didemnins—I. Revision of the stereochemistry of the hydroxyisovalerylpropionyl (HIP) unit
Kandasamy Ramasamy, Roland K. Robins and **Ganapathi R. Revankar**	5869	Total synthesis of 2'-deoxytoyocamycin, 2'-deoxysangivamycin and related 7-β-D-arabinofuranosylpyrrolo[2,3-*d*]pyrimidines via ring closure of pyrrole precursors prepared by the stereospecific sodium salt glycosylation procedure
Shigehiro Takase, Itsuo Uchida, Hirokazu Tanaka and **Hatsuo Aoki**	5879	Synthesis of debromo-8,8a-dihydroflustramine C, a model synthesis toward amauromine
Shigehiro Takase, Yoshikuni Itoh, Itsuo Uchida, Hirokazu Tanaka and **Hatsuo Aoki**	5887	Total synthesis of amauromine
Kenji Mori and **Minoru Kato**	5895	Synthesis of (6*S*, 1'*S*)-(+)-hernandulcin, a sweetner, and its stereoisomers
Kenji Mori and **Young-Bae Seu**	5901	Synthesis of both the enantiomers of 7-ethyl-5-methyl-6,8-dioxabicyclo[3.2.1]oct-3-ene, the *Mus musculus* (house mouse) pheromone
Yasuyuki Endo, Koichi Shudo, Akiko Itai, Masashi Hasegawa and **Shin-ichiro Sakai**	5905	Synthesis and stereochemistry of indolactam-V, an active fragment of teleocidins. Structural requirements for tumor-promoting activity
Angélina Florès-Parra et **Françoise Khuong-Huu**	5925	Une approche de synthèse de l'entérocine. Addition de carbanions α-soufrés sur le quinide

Franz Siglmüller, Rudolf Herrmann and **Ivar Ugi**	5931	Chiral ferrocenylalkylamines from (−)-menthone
Michael C. Stumpp and **Richard R. Schmidt**	5941	Synthesis of moenocinol
Jürgen Scherkenbeck, Wolfgang Dietrich, Dietrich Müller, Dirk Böttger and **Peter Welzel**	5949	Forskolin studies
Johann Mulzer and **Clemens Brand**	5961	Enantioselective syntheses of D- and L-ribo- and arabino-C_{18}- phytosphingosine from (*R*)-2,3-*O*-isoproprylidene glyceraldhyde
U. Hildebrand, J. Hübner und **H. Budzikiewicz**	5969	Synthese von (Alkoxythio)carbonyl-Derivaten (Acylsulfensäureestern) des Pyridins
Gottfried Heinisch and **Gerhard Lötsch**	5973	Homolytic alkoxycarbonylation reactions in two-phase systems—II. Studies on the ethoxycarbonylation of some selected π-deficient *N*-heteroaromatic systems
Sajan P. Joseph and **D. N. Dhar**	5979	Rearrangement of nitrones to amides using chlorosulfonyl isocyanate
David Tanner and **Peter Somfai**	5985	Asymmetric synthesis of (*R*)-(+)- and (*S*)-(−)-2,2,4-trimethyl-4-(hydroxymethyl)-1,3-dioxolane of high enantiomeric purity
Yehuda Yanuka and **Felix Bergmann**	5991	Spectroscopic studies on caffeine and isocaffeine
Berhanu Abegaz, Francisco Camps, José Coll, Miguel Feliz, Ulla Jacobsson, Carlos Miravitlles, Elias Molins and **Jordi Torramilans**	6003	The structures of vulgarin and its isomers—a reinvestigation
D. Bryce-Smith, A. Gilbert and **J. Mattay**	6011	Factors influencing the relative tendencies for *ortho* and *meta* cycloadditions of ethylenic compounds to the benzene ring
Vincenzo Amico, Mario Piattelli, Placido Neri, Giuseppe Ruberto and **Luciano Mayol**	6015	Novel metabolites from the marine genus *Cystoseira*—application of two-dimensional ^{1}H-^{13}C correlation to the structure elucidation
Maria Chrzanowska and **Maria D. Rozwadowska**	6021	Synthesis of secoisoquinoline alkaloids. Total synthesis of peshawarine
Goffredo Rosini, Monika Geier, Emanuela Marotta, Marino Petrini and **Roberto Ballini**	6027	Stereoselective total synthesis of racemic grandisol via 3-oximino-1,4,4-trimethylbicyclo[3.2.0]heptane. An improved practical procedure
F. J. Lopez Herrera and **M. S. Pino Gonzalez**	6033	A synthesis of 2-deoxy-3-*O*-methyl-1,4-aldonolactones
E. Rubini, C. Gilon, Z. Selinger and **M. Chorev**	6039	Synthesis of isosteric methylene-oxy pseudodipeptide analogues as novel amide bond surrogate units
Gerard Costello and **J. Edwin Saxton**	6047	Approaches to the synthesis of *Aspidosperma* alkaloids—I. Preliminary studies in the vincadifformine group
John W. Blowers, J. Edwin Saxton and **Alistair G. Swanson**	6071	Approaches to the synthesis of *Aspidosperma* alkaloids—II. The synthesis of 18,19-didehydrotabersonine

NUMBER 22

TETRAHEDRON SYMPOSIA-IN-PRINT NUMBER 28

STRUCTURE AND REACTIVITY OF ORGANIC RADICAL IONS

Guest Editor: HEINZ D. ROTH
AT & T Bell Laboratories, New Jersey, U.S.A.

	i	Contributors to this issue
	ii	Editorial Notice
	vii	Announcement: Tetrahedron Symposia-in-Print
	xi	Preface
Heinz D. Roth	6097	Early contributions to the chemistry of organic radical ions
Stephen F. Nelsen, Silas C. Blackstock and **Kenneth J. Haller**	6101	Crystal structures of two *syn* bent tetraalkylhydrazines, their radical cations, and a dication
Miroslaw Soroka and **Henry J. Shine**	6111	Reaction of thianthrene cation radical with Grignard reagents. Evidence for electron transfer and trapping of alkyl radicals by the thianthrene cation radical
F. D. Saeva	6123	The mechanism of electrocleavage reactions and photorearrangements of some sulfonium salt derivatives
T. Ulrich, U. E. Steiner and **W. Schlenker**	6131	Control of photo-electron-transfer induced radical production by micellar cages, heavy-atom substituents and magnetic fields
Noboru Mataga, Tadashi Okada, Yu Kanda and **Hiroshi Shioyama**	6143	Behavior of radical ion pairs produced by photoinduced electron transfer in polar solutions. Their dynamics in picosecond-hundred nanosecond regime
Kazuhiro Maruyama, Hiroyuki Furuta and **Atsuhiro Osuka**	6149	CIDNP study on porphyrin-photosensitized reactions with phenol and quinone. Dimerization of 4-methoxyphenol and cross coupling of benzoquinone to porphyrins covalently linked with phenol group
Heinz D. Roth, Marcia L. M. Schilling and **Christopher J. Abelt**	6157	Radical cations of cyclopentadiene dimers—facets of an intriguing energy surface
Dennis J. Bellville and **Nathan L. Bauld**	6167	Theoretical reaction paths for cation radical cycloadditions. The [3+2] or role-reversed cation radical Diels–Alder
Akio Okamoto, Miles S. Snow and **Donald R. Arnold**	6175	Photosensitized (electron transfer) carbon–carbon bond cleavage of radical cations. The diphenylmethyl system
Dan W. Reynolds and **Nathan L. Bauld**	6189	The diene component in the cation radical Diels–Alder
Yasuhiko Kawamura, Marion Thurnauer and **Gary B. Schuster**	6195	Putative electrocyclic reaction of cyclobutene radical cation. 1,2-diphenyl-3,3,4,4-tetramethylcyclobutene
Paul G. Gassman and **Glenn T. Carroll**	6201	The reaction of 1,2,2-trimethylbicyclo[1.1.0]butane with excited state 1-cyanonaphthalene
Frederick D. Lewis and **James R. Petisce**	6207	Proton transfer reactions of photogenerated cyanoaromatic–methylaromatic radical ion pairs
A. Albini and **M. Mella**	6219	The photochemical reaction of 1,4-naphthalenedicarbonitrile with aromatic pinacols and pinacol ethers

Brian F. Yates, Willem J. Bouma and **Leo Radom**	6225	Distonic radical cations. Guidelines for the assessment of their stability
R. W. Holman, M. D. Rozeboom, M. L. Gross and **C. D. Warner**	6235	Mass spectrometry for investigations of gas-phase radical cation chemistry. The two step cycloaddition of the benzene radical cation and 1,3-butadiene
Thomas Weiske and **Helmut Schwarz**	6245	Intrinsic alkyl radical properties inferred from the study of unimolecular dissociations of gaseous carboxylic acid cation radicals
Richard N. McDonald and **A. Kasem Chowdhury**	6253	Generation and ion–molecule reactions of ethyl diazoacetate anion radical ($EtO_2CCHN_2^{\cdot-}$)
John M. Oakes and **G. Barney Ellison**	6263	Photoelectron spectroscopy of radical anions
Stuart W. Staley and **Allison E. Howard**	6269	Influence of alkyl substituents of the π^* negative ion states of benzene and its derivatives. Electron transmission spectroscopy of *p*-alkylanilines
Hussain Al-Ekabi and **Paul de Mayo**	6277	Surface photochemistry. The CdS photoinduced dimerization of N-vinylcarbazole
Marye Anne Fox and **Janet N. Younathan**	6285	Radical cation intermediates in the formation of Schiff bases on irradiated semiconductor powders
R. C. Haddon, S. V. Chichester and **J. H. Marshall**	6293	Electron delocalization in 9-oxidophenalenone complexes of boron and beryllium
Xue-Zhi Qin and **Ffrancon Williams**	6301	ESR studies of the ring opening of cyclopropane radical cations in Freon matrices
Keichi Nunome, Kazumi Toriyama and **Machio Iwasaki**	6315	Structures and reactions of radical cations of some bicycloalkanes and their related alkenes as studied by 4 K matrix ESR
T. Bally, E. Haselbach, S. Nitsche and **K. Roth**	6325	Electronic structure and photochemical rearrangements of matrix-isolated C_8H_{10} radical cations
Takamasa Momose, Tadamasa Shida and **Tsunetoshi Kobayashi**	6337	On the singly bridged structure of the radical cation of dicyclopentadiene. Combined studies of photoelectron spectrum, electronic absorption spectrum, and MO calculations
Lester Andrews and **Joseph T. Lurito**	6343	Absorption spectra and photochemical rearrangement of octatetraene and decapentaene radical cations in solid argon

NUMBER 23

	i	Contributors to this issue
		TETRAHEDRON REPORT NUMBER 212
Suresh K. Pradhan	6351	Mechanism and stereochemistry of alkali metal reductions of cyclic saturated and unsaturated ketones in protic solvents
Charles F. Wilcox, Jr. and **David A. Blain**	6389	The properties and chemistry of the aromatic 3*H*-cyclonona[*def*]biphenylenyl anion
Yong M. Choi, Norbert Kucharczyk and **R. Duane Sofia**	6399	Metabolites of felbamate: synthesis of 2-(4-hydroxyphenyl)-1,3-propanediol dicarbamate, 2-phenyl-2-hydroxy-1,3-propanediol dicarbamate, and 2-phenyl-1,3-propanediol monocarbamate
Dean K. Ellison, Paul C. Trulove and **Reynold T. Iwamoto**	6405	Photoelectrochemical synthesis with PT-coated TiO_2 powder: alkylation of 1-alkylpyridinium ion
James R. Damewood, Jr. and **Robert Gambogi**	6411	Conformational analysis of hexadecamethylcyclooctasilane, $(Me_2Si)_8$

Atanu Biswas, Charles Eigenbrot and **Marvin J. Miller**	6421	Rearrangements of N-hydroxy β-lactams
Hidetsura Cho, Yoshihiro Hamamoto, Keiyuu Shima and **Zenei Taira**	6429	X-ray crystallographic analysis of tautomeric dihydropyrimidine derivatives
Masahiro Kataoka and **Takeshi Nakajima**	6437	Geometrical structures and spectra of corannulene and icosahedral C_{60}
Yoshiteru Oshima, Jun-ichi Saito and **Hiroshi Hikino**	6443	Sterebins A, B, C and D, bisnorditerpenoids of *Stevia rebaudiana* leaves
Atsunori Mori, Isao Arai, Hisashi Yamamoto, Hisao Nakai and **Yoshinobu Arai**	6447	Asymmetric Simmons–Smith reactions using homochiral protecting groups
Kenji Mori and **Yutaka Nakazono**	6459	Synthesis of both the enantiomers of invictolide, a pheromone component of the red imported fire ant
Yoshiaki Nakahara, Akira Fujita, Kazuo Beppu and **Tomoya Ogawa**	6465	Total synthesis of antibiotic A23187 (calcimycin) from D-glucose
Janusz Jurczak, Tomasz Bauer and **Sławomir Jarosz**	6477	Stereochemistry of Diels–Alder reaction at high pressure: asymmetric induction in the reaction of 1-methoxybuta-1,3-diene with sugar aldehydes
Armin de Meijere, Dieter Kaufmann and **Ihsan Erden**	6487	Photooxidation of dispiro[2.0.2.4]deca-7, 9-diene and its analogues: synthesis and properties of new nonenolizable cyclohex-2-ene-1,4-diones
P. A. Carson and **D. W. Roberts**	6495	Nucleophilic substitution reactions of the heterocyclic fluoro-olefin perfluoro-(3,6-dihydro-2-methyl-2H-1,2-oxazine)
Ralf Plate, Annette W. G. Theunisse, Rutger J. F. Nivard and **Harry C. J. Ottenheijm**	6511	A biomimetic approach to sporidesmins. Synthesis of an α,β-epoxytryptophan derivative
Philip S. Jones, Steven V. Ley, Nigel S. Simpkins and **Alan J. Whittle**	6519	Total synthesis of the insect antifeedant ajugarin I and degradation studies of related clerodane diterpenes
Fiamma Ronchetti and **Lucio Toma**	6535	Cis and trans β,γ-disubstituted δ-valerolactones: conformational studies and configurational assignments by molecular mechanics
Jonas Kjellberg and **Nils Gunnar Johansson**	6541	Characterization of N7 and N9 alkylated purine analogues by ^1H and ^{13}C NMR
Robert J. Capon, John K. Macleod and **Peter J. Scammells**	6545	The trikentrins: novel indoles from the sponge *Trikentrion flabelliforme*
Jack E. Baldwin and **E. Lee**	6551	Synthesis of bicyclic γ-lactams via oxazolidinones
Ole E. Jensen and **Alexander Senning**	6555	Studies on amino acids and peptides XII. Synthesis of thiated analogues of Boc-S-Ala-Aib-S-Ala-OMe and Ac-S-Ala-Aib-S-Ala-OMe
Robert L. Hendrickson and **John H. Cardellina II**	6565	Structure and stereochemistry of insecticidal diterpenes from the sea pen *Ptilosarcus gurneyi*

NUMBER 24

	i	Contributors to this issue
	6571	Erratum
		TETRAHEDRON REPORT NUMBER 213
H. B. Kagan and **J. L. Namy**	6573	Lanthanides in organic synthesis
Ajoy K. Banerjee, Jaime Alvárez G., Magaly Santana and **Maria C. Carrasco**	6615	The Clemmensen reduction of α, β-unsaturated ketones
Manfred G. Reinecke, David E. Minter, De Chang Chen and **Wen Mei Yan**	6621	Alkaloids of the Chinese herb guan-bai-fu (*Aconitum koreanum*); guan-fu bases Y and A
Ikchoon Lee, Chang Kon Kim and **Heon Su Seo**	6627	Theoretical studies on the acid hydrolysis of acetamide
Karsten Krohn and **Ulrich Müller**	6635	Synthesis of 4-deoxyrhodomycinones with incorporation of (S)-lactic acid
Atef Hamed, Edgar Müller and **Johannes C. Jochims**	6645	The reaction of 2,4,6-tris(trimethylsiloxy)-1,3,5-triazine with chlorocarbenium ions: a new access to 1-oxa-3-azabutatrienium and 2-azaallenium salts
Herbert Mayr and **Werner Heilmann**	6657	Steric control of regiochemistry in the reactions of methyl substituted pentadienyl cations with isobutene
Herbert Mayr, Werner Heilmann and **Roswitha Lammers**	6663	A carbocationic route to 3-substituted 1,4-cycloheptadienes
Maria D. Rozwadowska and **Maria Chrzanowska**	6669	Synthesis of secoisoquinoline alkaloids total synthesis of cryptopleurospermine
H. R. Sonawane, B. S. Nanjundiah and **R. G. Kelkar**	6673	Light-mediated transformations of olefins into alcohols: reactions of hydroxyl radicals with cycloalkenes
Mercedes Medio Simón and **José Sepúlveda Arques**	6683	New cycloaddition reactions of 1-phenyl-4-vinylpyrazole
P. Gramatica, P. Manitto, D. Monti and **G. Speranza**	6687	New synthesis of optically active vitamin E side chain by chemicoenzymatic approach
Josep Bonjoch, Fontsanta Boncompte, Núria Casamitjana and **Joan Bosch**	6693	Benzomorphan related compounds—XXII. Reduction of 3-(tetrahydropyridyl)indoles to indolines. Synthesis of a new type of indolomorphan
A. Grandas, E. Pedroso, E. Giralt, C. Granier, and **J. Van Rietschoten**	6703	Convergent solid phase peptide synthesis—IV. Synthesis of the 35-43 and 32-34 protected segments of the toxin II of *Androctonus australis Hector.*
Terry M. Cresp and **Dieter Wege**	6713	The addition of benzyne to azulene
James P. Brennan and **J. Edwin Saxton**	6719	A new synthesis of the cylindrocarine group of alkaloids
Kiyoshi Bannai, Takeshi Toru, Takeo Oba, Toshio Tanaka, Noriaki Okamura, Kenzo Watanabe, Atsuo Hazato and **Seizi Kurozumi**	6735	Synthesis of chemically stable PGI_2 analogs II—synthesis of hologen substituted PGI_2 analogs
Toshio Tanaka, Noriaki Okamura, Kiyoshi Bannai, Atsuo Hazato, Satoshi Sugiura, Koji Tomimori, Kenji Manabe and **Seizi Kurozumi**	6747	Syntheses of (5E)-PGE_2 and new 6-functionalized derivatives by the use of palladium-catalyzed decarboxylative allylic alkylation